SHIPBUILDING COSTS AND ESTIMATES. See p. 571.
STANDARD UNIFORM FOR THE MERCANTILE MARINE (Illus.). See p. 575.

Physical & Applied Sci. rials

SHIPBUILDING AND SHIPPING RECORD

A JOURNAL OF SHIPBUILDING, MARINE ENGINEERING, DOCKS, HARBOURS AND SHIPPING

LONDON: Queen Anne's Chambers, S.W. 1.
GLASGOW: 87, Union Street.
NEWCASTLE: Lloyds Bank Chambers.

THURSDAY, MAY 23, 1918.

Price Sixpence Weekly.
Prepaid Subscription for 12 months:—
Inland, £1 5s. 0d.; Abroad, £1 12s. 0d.

The Delta Metal Co., Ltd., East Greenwich, London, S.E.10. (Established over 30 years.) **FORGINGS "DELTA" BRAND** BRONZE, BRASS, YELLOW METAL, NAVAL BRASS, COPPER, ETC. BLACK OR ROUGH MACHINED.

THE YORKSHIRE COPPER WORKS, LTD., LEEDS. **TUBES** BRASS and COPPER. "BEMAL" BRASS CONDENSER TUBES.

FELLOWS BROS., CRADLEY HEATH. RIGGING SCREWS.

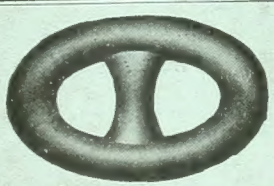
SEE'S ASH EJECTORS, SELF-TIPPING ASH BUCKETS, &c.
PATENT **ASH DISCHARGING APPLIANCES**
F. J. TREWENT & PROCTOR, LTD.
43, BILLITER BUILDINGS, LONDON, E.C. 3.

C. E. HEINKE & CO.,
DIVING APPARATUS.
87, GRANGE ROAD,
Telegrams—"Heindig, London." BERMONDSEY, LONDON, S.E. 1.

JOHN LEVICK, LTD.,
METAL SPINNING WORKS,
ALMA STREET, ASTON, BIRMINGHAM.
PATENTEES AND MANUFACTURERS OF
Folding and Fixed Lavatory Basins, Baths, Commodes, etc., for Railway Carriages, Ships' Berths, etc., etc.

HIGGINSON'S
CARGO-BLOCKS
7,
HURST STREET, LIVERPOOL.

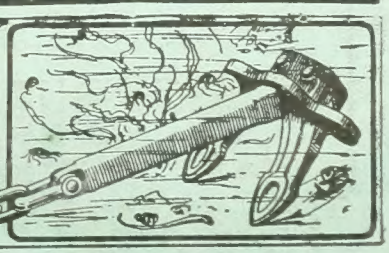
CABLES.
ANCHORS.



N. HINGLEY & Sons, Ltd.
NETHERTON IRON WORKS, DUDLEY.

STEERING TELEMOTORS
MACTAGGART, SCOTT & CO., LTD
Contractors to British and Foreign Admiralties.
Loanhead, Edinburgh.
Telegrams: "Valve," Loanhead. Telephone: No. 12.

WRIGHT'S TIPTON ANCHORS & CHAINS

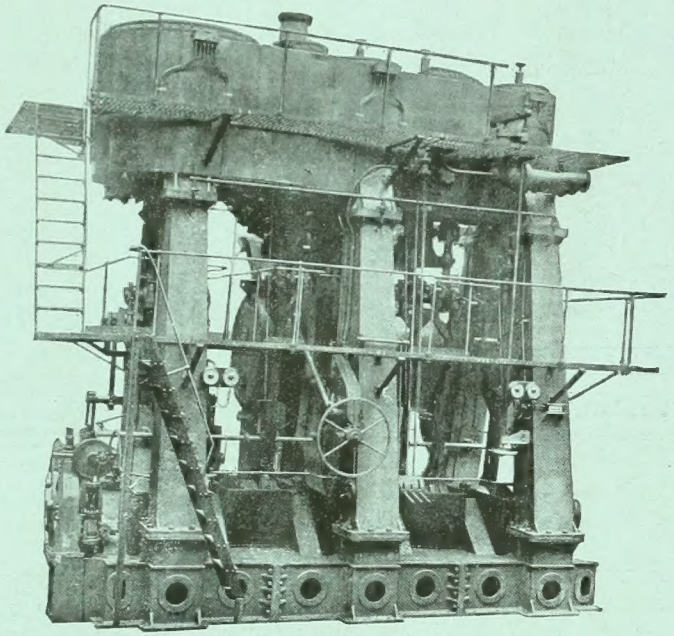


Alphabetical Index of Advertisers, Page 50. 4 w. Classified Index to Advertisements, Page 45

JOHN G. KINCAID & CO., LTD.,

Engineers and Boilermakers,

GREENOCK.



Kincaid's Standard Marine Engine, 27, 44 and 73 in. dia. × 48 in. Stroke.

Telegrams: "KINCAID, GREENOCK"

Codes: A.B.C. LEIBERS. ENGINEERING TELEGRAPH

ENGINES AND BOILERS FOR ALL CLASSES OF STEAMERS UP TO LARGEST SIZES.

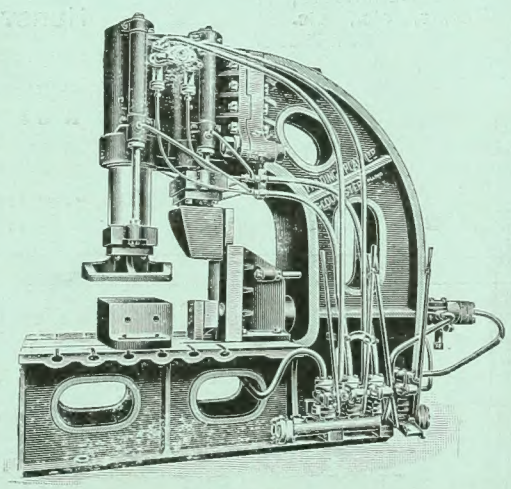
SHIPMENT OF ENGINES AND BOILERS TO ANY PART OF THE WORLD A SPECIALITY.

CONTRACTORS TO THE ADMIRALTY.

HYDRAULIC MACHINERY

TWEDDELL'S SYSTEM

RIVETTERS (Thousands working.)
FLANGERS - (Over 200 sold.)
BENDERS
FORGING, WELDING, STAMPING } PRESSES
STEAM-HYDRAULIC PRESSES 600 to 5,000 Tons.
PUNCHES
SHEARS
PUMPS & ACCUMULATORS



PATENT UNIVERSAL FLANGER.

For

SHIPBUILDING & BOILER-MAKING

Well known in the Foremost Shipyards of the World.

FIELDING & PLATT, LTD. GLOUCESTER ENGLAND.

SHIPBUILDING AND SHIPPING RECORD

A JOURNAL OF SHIPBUILDING, MARINE ENGINEERING, DOCKS, HARBOURS AND SHIPPING

PUBLISHED EVERY THURSDAY AT

QUEEN ANNE'S CHAMBERS, WESTMINSTER, LONDON, S.W. 1.

Branch Offices—

GLASGOW: 87, UNION STREET. NEWCASTLE: LLOYDS BANK CHAMBERS.
NEW YORK: WOOLWORTH BUILDING.

Telegraphic Address: "RECORDSHIP, VIC., LONDON."
Telephone No.: 2247, VICTORIA.

Subscription, including regular weekly and special issues, published from time to time, payable in advance and postage free:—

British Isles	£1 5s. 0d.
Elsewhere	£1 12s. 0d.
Single Copies	Sixpence.

The Editors will be glad to consider articles and paragraphs submitted by competent writers. All accepted contributions will be paid for. Whilst every care will be taken to return unsuitable articles, photographs and drawings (when a stamped addressed envelope is enclosed for that purpose), the Editors cannot hold themselves responsible for the safekeeping of unsolicited contributions.

VOL. XI.] THURSDAY, MAY 23, 1918. [No. 21.

CONTENTS.

EDITORIALS:
- Shipbuilding's New Agreement... 565
- A Standard Uniform... 565
- The Torpedo Badge... 565
- Value of Requisitioned Ships... 565
- Germany and Neutral Ships... 566
- Defence of the Realm Losses... 566
- Germans and the U-Boat... 566
- The Indian Mails... 566
- Germany's East African Intrigues 566
- Labour and After the War... 567
- Joint Committees in Shipyards... 567
- Dockyard Shop Committees... 567
- Riveting Records... 567
- Resistance of Concrete Ships... 567
- Emigration Policy... 568
- Tar Oil Fuel in Diesel Engines... 568
- Steam Turbine Blading... 569
- Publications Received... 570

ILLUSTRATED:
- Fire on SS. *Edavana* off Bombay 570
- A Standard Uniform... 575

MISCELLANEOUS:
- Shipbuilding Costs and Estimates 571

SHIPYARD APPLIANCES:
- Large Ship-Plate Bending Press... 578

GENERAL NEWS SECTION... 579

SHIP SALES... 587

SHARE TABLE... 588

Shipbuilding's New Agreement.

FROM the point of view of organised labour, the system of yard, district and national committees set up by the Shipbuilding Employers' Federation and the Shipyard Trades Unions is a much better arrangement than that proposed by the Admiralty for its dockyards and other naval establishments. It is, of course, an emergency measure, primarily intended to expedite the construction of merchant ships, but, coupled with the new temporary provisions for the avoidance of disputes, it provides, at any rate, the framework of a highly suitable after-war arrangement. As stated in the agreement which was ratified at York last week, the duties of the committees are definitely limited. But if both sides endeavour loyally to discharge them, the results are bound to be so satisfactory that extension of the scope of the organisation will be assured. There is ground for the average shipbuilding employer's doubts about the soundness of the principle of works' committees; and, as constituted, these works' and district committees unquestionably fall short of the advanced Trade Unionist's ideal of "control." But it need not be overlooked that two things are achieved for which both sides can afford to risk a great deal. One is industrial co-operation from the yard and shop right up to executive circles. The other is the certainty that differences will be reduced to a minimum by the obligation which is laid upon the parties to deal with troubles at their sources. Properly worked, these York agreements should, in our opinion, give good results.

A Standard Uniform.

It is evident from the report of the Board of Trade Committee on a standard uniform for the mercantile marine that there is still ample room for a diversity of opinion. Called into being, mainly through the instrumentality of the Admiralty, as a matter of some urgency owing to confusion between the two services, it has taken more than a year to produce a report on the subject, and although at the beginning it was considered "very desirable, on account of the direct naval interests involved," to encourage the wearing of a standard uniform, the shallows and narrows of Parliament must yet be navigated before these urgent and pressing "direct naval interests" can be preserved. It is obvious from examination of the signatories to the majority and minority reports that there still remains uncompromising hostility in certain quarters, and the question is, in consequence, far from that stage of amity which would lend itself to facile legislation.

The Torpedo Badge.

Wide approval is given to the official decision to recognise by the bestowal of badges, the fortitude of officers and men of the merchant service who proceed to sea again after having been on board a vessel sunk or damaged by torpedo or mine. The badge will be in the form of a torpedo, and worn on the left sleeve. An additional bar will be given for each time the man's ship is mined or torpedoed. This arrangement is retrospective, so that quite a large issue of badges must be made in the first instance. We are glad this step has been taken. The services of the mercantile marine have been as unostentatious as they have been extensive. Since the beginning of the war, 12,500 men in the merchant service have lost their lives by enemy action, and doubtless those who have received grievous bodily injury are numbered by thousands. Yet no single instance has come within the cognizance of the Board of Trade in which either officers or men have failed to take out their ship when it has been ready for them to sail. That is an eloquent record of brave unassuming devotion to duty. We have frequently emphasised the essential war service in which the mercantile marine is engaged, and for that reason we are pleased that the Board of Trade is giving further consideration to the question of pensions and allowances for the dependants of officers and men who have lost their lives in the war.

Value of Requisitioned Ships.

Compensation for the loss by war risks of a requisitioned ship running under the well-known Admiralty charter party T. 99 is based on "the ascertained value." The important point has arisen in the case of Harries *v.* the Shipping Controller whether "the ascertained value" relates to the value of the ship running under a requisition or the value of the ship free from requisition. There is very considerable difference frequently in those two standards of compensation. In this particular case the umpire in the arbitration placed the value of the *Longbenton* under requisition as at the date of her loss from enemy action at £28,500. If she had not been under requisition her value would have been £44,500. The umpire, and also Mr. Justice Sankey in the High Court, both decided that the lower sum of £28,500 was the amount falling due as compensation. The judge laid emphasis on the view that the actual value of the vessel at the time of her loss was the value of a requisitioned vessel. That being her actual value it was also her "ascertained value." Umpire and judge had both to construe the terms of a written contract of affreightment, not to frame it. The fairness of its conditions as between the Government and the shipowner did not come within their survey. Nevertheless, the contention of the owners has a good deal of force that the action of the Government in requisitioning the *Longbenton*, and so reducing her value, is an element of loss which ought to have been included and not excluded by the terms of the Admiralty charter.

Germany and Neutral Ships.

Reports reach this country through Scandinavian sources that a law has been promulgated in Germany to the effect that neutral vessels will be considered to be in the war service of the enemy unless circumstances prove to the contrary. When the great part of the mercantile marine of a neutral state is carrying in the interest of the Allies, or when a commercial agreement for that purpose may have been entered into, the vessels of the neutral state are to be deemed enemy ships. This indeed represents as impudent a claim as can be put forward. The rights of neutral vessels rest upon the law of nations, and that law can only be altered in a moral, juridical sense by common consent embodied in practice or in conventions adhered to with practical unanimity. In the broad sense, this latest pretence at a modification of the usages of civilised mankind is simply a declaration of national immorality. For Berlin to make decrees contrary to international law is unfortunately a loathsome spectacle to which we have become accustomed. Probably, beyond marking another milestone on the road of Prussian degradation, this latest inroad on neutral rights will not in practice make very much difference. The German submarine commander launched his torpedo against the neutral vessel with as little scruple before this so-called law as he will do after it.

Defence of the Realm Losses.

A clearly distinguishable broad principle runs through the awards made by the Defence of the Realm Losses Royal Commission. Compensation is given for direct loss due to the actual occupation or interference with land or premises rather than for the indirect consequential loss of business owing to steps taken in furtherance of operations connected with the war. Thus owners or occupiers of agricultural land taken for naval or military purposes receive in the main substantial compensation. It does not follow that in every case the amount claimed is granted. In the cases of which we are given details, compensation is awarded when docks, wharves, and harbours are wholly or partially taken over. The Port of London Authority, for instance, receives an annual payment of £9,091 for the occupation of storage space and offices. On the other hand, compensation is withheld for loss caused by restrictions on the running of pleasure steamers, by prohibitions on the sale of certain flag charts and books, and by interference with business due to the closing of a port. Nor have claims been allowed for damage to a vessel while entering port, for the requisitioning of a steamship, or for damage to a ship by gunfire. The Commissioners have an absolute discretion. At law the claimants have no strict rights. The Crown may make unfettered use of their property for the purposes of the defence of the realm. Compensation is entirely a matter of grace, in order to mitigate hardship.

Germans and the U-boat.

It has not escaped notice that other Germans, in addition to Junkers who prefer to talk about fighting rather than to fight, are of a mind to maintain the German "right" to sink merchant ships at sight after the end of this war. Berlin's highest naval strategists appear to be amongst the number, although so far none has been so blunt about the business as Herr Kapp was the other day. Von Capelle, who manages to do a good deal of entertaining juggling with figures relating to U-boat losses and new construction, said, for example, in the course of the speech to which we alluded a week ago, that provision has been made for the building of an adequate number of submarines for many years to come. As weapons of legitimate warfare submarines have, of course, interesting possibilities; but, taking a line through the context of the Admiral's speech, it is safe to conclude that he was not, when he spoke, thinking of legitimate warfare. Of course, the sinking of merchant ships by submarines is a futile kind of warfare, because when you have destroyed an enemy's surface ships and deem yourself comparatively free to use the seas, the enemy's submarines naturally proceed to make targets of your tonnage. Herr Ballin and other German shipowners can hardly, we think, have much sympathy with this new naval view of von Capelle and company. But what he and his friends think on the point is obviously of less account than what the people of the Entente countries think about it. And it is practically certain that no peace terms will be satisfactory to them which leave Berlin free to give effect to its peculiar views on this subject.

The Indian Mails.

As far as can be ascertained by inquiry in the quarters chiefly concerned, no definite policy has, as yet, been formulated in regard to the carriage of the mails between the United Kingdom and India, though this question cannot now be very long delayed. As a matter of fact, the last contract expired at the beginning of 1916, but, in the circumstances, was provisionally continued. Among the changes advocated are a duplication of the service, so as to provide better postal communication between the two countries. Since the arrangement now in force was agreed to nearly half a century ago, the needs of merchants have grown considerably, and in well-informed circles it is contended that it is an anachronism that India, almost alone among the great possessions of the British Empire, should have only one mail a week to and from England. During the past decade the letter post has increased 230 per cent., newspapers and book packets 70 per cent., and parcels 132 per cent., thus showing a necessity for improvement. Some authorities favour the idea of faster steamers. Big boats are, however, essential for speed, and, unfortunately, the dimensions of the Suez Canal will not permit the passage of much larger vessels than those now employed. Others, again, advocate the adoption of a poundage basis, so that by taking advantage of the services already provided by several different companies, dispatches and arrivals would be more frequent. Confessedly, the problem is not an easy one to solve, and, therefore, it is hoped that something has been done to ascertain the views of those directly interested. The dominant fact at present is that, assuming normal conditions, one cannot send a letter from Calcutta to England and receive a reply in less than 39 days. This, surely, is a long period. Whatever is done will, naturally, cost more; but when one reads about the waste of millions in Mesopotamia and other places, the plea of expense will not hold good, especially when the claims of business men for quick and more efficient transport are advocated.

Germany's East African Intrigues.

Nothing, so far, has been decided with reference to the immediate future of British maritime trade along the coast of East Africa, and it is not likely that anything will be done until conditions there are more settled than they are to-day. It may, however, be taken for granted that the German companies will not be allowed the almost unlimited scope with which they were favoured before the war. Thirty years ago, Zanzibar was the metropolis of the East Coast, and the great centre of commercial exchange. But it was not, of course, under the German flag, so the Germans determined to secure the business supremacy for their new port, Dar-es-Salaam. The story of how they succeeded throws an interesting sidelight on Germany's methods of colonial administration. The first bold stroke was the severance of the shipping links between Zanzibar and Dar-es-Salaam, which was effected by the establishment of a direct line to and from Hamburg, heavily subsidised by the Government. Direct communication was also opened with India, the Deutsche Ost-Afrika Linie being again utilised for the purpose. The British authorities were by no means idle while these things were being done, so Zanzibar was made a free port; all import duties were abolished; and a pier and warehouses were erected; but these efforts were too late, and the Germans won a complete victory. Aided by substantial Government assistance, the Deutsche Ost-Afrika Linie squeezed out all other competitors by reducing freights and passenger fares to such a level that all rivals were forced to retire. Then, when this end had

been achieved, all the charges were put up, and better steamers were placed in service. A British company endeavoured to compete with the Deutsche Ost-Afrika Linie in the Indian trade, but, it was not long before the Germans announced that an "understanding" had been reached between the two concerns, which really resulted in the withdrawal of the British line. For some years after that very few British ships, with the exception of occasional cargo boats, were seen from Delagoa Bay to Aden.

Labour and After the War.

When Sir George Carter, managing director of Cammell Laird & Co., Birkenhead, and President of the Shipbuilding Employers' Federation, recently expressed himself as in favour of a shortening of the working day, we pointed out that the trade unions might profitably seize the opportunity to open negotiations with the object of framing new general conditions for after the war. So far, no union or group of unions has done so openly, although most of the organisations appear to believe that something may be achieved in the direction indicated through the medium of the new joint committees which have been set up. The great obstacle to progress seems to be that the representatives of the workers incline to pick and choose amongst the subjects upon which agreement is necessary—to insist, in other words, in settling one question before proceeding to the consideration of another. From their point of view that may be as sound procedure as any that could be devised. Nor, considering it as tactics, would it be likely to be detrimental to the interests of employers. But, in the opinion of the average observer, who has no bias one way or the other, the only proper way in which to go about this business is to take all the questions together. They all unmistakably hang together; besides, in almost every official Labour pronouncement which has been made to date emphasis has been laid on the bargaining value of the legal right of the trade unions to complete restoration of pre-war conditions.

Joint Committees in Shipyards.

The Government has not hesitated to adopt the principles of the famous Whitley report in the management of their own workshops, the announcement having been made that the Admiralty has decided to set up in each of the Royal dockyards shop committees and a yard committee to deal with questions of the workmen's welfare and conditions of service. This has been followed by an important agreement which was ratified at York last week, between the Shipbuilding Employers' Federation and the Shipyard Trade Unions Joint Committee, with the object of improving industrial conditions in the shipyards and accelerating the output of tonnage. The agreement, it is of interest to note, has been approved by Lord Pirrie, the Controller of Merchant Shipping, and will come into operation immediately. According to *The Times*, the administrative proposals will practically lead to the discontinuance of the Admiralty's Shipyard Control Department. The Admiralty is to be the only central authority to which the shipbuilding or ship-repairing industry will be responsible, and will make its own arrangements as between other Government Departments, with the object of securing co-operation between the industry and the Admiralty. A number of committees are to be established. There are to be Yard Committees to consider suggestions for increasing output and prepare monthly estimates of work, to consider hindrances to output, including lost time, and to exercise a supervisory interest in carrying out the schemes of district joint committees and the National Joint Committee. The last-named committee will be consulted before the issue of any general orders or instructions by the Admiralty, in order that their opinion may first be received as to steps to be taken to secure the fullest output.

Dockyard Shop Committees.

The decision of the Admiralty to permit workers in the Royal dockyards and other naval establishments to elect shop committees, noted above, represents a considerable concession to Labour. It is true that the archaic system of petitioning is to be retained, and that all questions on which there is local failure to agree are to be referred—presumably, for settlement—to the Admiralty. A large section of the workers will, no doubt, make these reservations the grounds of strong objections. But they will act very foolishly if, in pursuit of the extremist's impossible ideal of "control," they allow this opportunity to improve the standing of their class as a whole to go unutilised. Each shop, and each important trade not employed in a shop, is to have its elected committee, which will have the right to make known its decisions to the officers of the department concerned. In the event of failure to agree, there is to be a reference to a Yard Committee, elected by the Shop Committees. We have indicated what the defect of the arrangement is from the point of view of orthodox Trade Unionism. There is no appeal from the Admiralty's decision. But, obviously, if the Shop Committees and the Yard Committees do their work efficiently there will be no need to appeal to the Admiralty at all. The basic idea of the arrangement is, in fact, to settle all differences at their places of origin.

Riveting Records.

If the ultimate effect of the record breaking which is proceeding here and in the United States, is appreciably to increase the output of the average riveter there will be nothing but praise to be said of the movement. The output of the average squad can easily stand an increase. It is doubtful, however, that the movement will have such an effect, and it goes almost without telling, that we are sorry to say so. The average man could not possibly reach the figures which are now being achieved, and there is, therefore, no inducement for him to try. In other words, he feels that as he cannot be amongst the champions there is no obligation upon him to do anything extra at all. By putting competition on a different basis, however, he might be spurred to greater effort, and the total volume of work be considerably increased. The test might, for instance, be made the riveting of complete ships. In pre-war days it would not have been possible to arrange many competitions on that basis; types of ships were too varied and yards were not all alike in respect of equipment. But that is not the case now—not, at any rate, to the same extent. Most establishments are doing standard ships of one design, and it would not, in our opinion, be difficult for two places building the same type to make a match on the basis we have indicated. By doing so, the average man would be stimulated, and it is the average man who is most in need of stimulation.

Resistance of Concrete Ships.

Advocates of reinforced-concrete ships claim that one of the advantages accruing from the use of concrete is the smoother surface afforded as compared with steel ships, involving, accordingly, less expenditure of power in overcoming skin friction. This claim has been met by an assertion of Professor Everett's that "the difference in skin friction, if any, is in favour of the steel ship well painted." Now, it is easy enough to make assertions of this nature, but the proving of them is a more difficult matter. It is, however, open to doubt whether with flush plating and riveting, the surface afforded by steel ships is not bettered by those of reinforced concrete. This is only an opinion; experiment alone can give the truth. When it comes to a question of the power necessary for the carrying of a given amount of cargo in reinforced concrete vessels and those of steel, there is little doubt about which type will require the greater power for a certain definite speed. Take the case given by Mr. Pollock, in his recent paper. A concrete vessel carrying 300 tons deadweight has a displacement of 640 tons, and

one of steel, 455 tons. Now, even allowing for the reduced speed-length ratio in the concrete ship, and for the higher Admiralty constant which will be accordingly obtained, there will still be a balance of from 10 to 15 per cent. less power in favour of the steel ship. This does not seem very much when the difference in displacement is considered, but would mean a lot in the coal bill per annum. As the sizes of ships increase, the differences in displacement for given deadweight become less, so that the power required should not differ very much in the two types of ships, but unless some advantage is to be gained by reduction in skin resistance, the steel ship should always require less power than the heavier one of reinforced concrete.

EMIGRATION POLICY.

WE have no doubt that the close attention of the shipping industry will be given to the Emigration Bill which Mr. Long, the Colonial Secretary, has just introduced in the House of Commons. It involves a new and strongly marked departure in policy, which, if it is endorsed by the Legislature, will have important consequences for companies which have in the past carried emigrant traffic, and intend to resume it after the war. We need not now speculate on the extent to which a movement of population overseas will follow. Such as it will be, the Government evidently intends to take a leading part in controlling the channels through which the stream of emigration will flow. For the moment it will suffice that we should explain in its main features the scope of Mr. Long's measure.

In the preamble, the design of the Bill is described as being "to improve the existing organisation for affording information and assistance to those who wish to emigrate from the British Islands and to provide for the establishment and powers of a Central Emigration Authority, and for the supervision and control of passage brokers and passenger brokers' agents and emigration societies, and for purposes in connection therewith." The scheme indeed centres round the Central Emigration Authority. It will hold in its hands the administrative strings, and in reality it will be the creation of the Secretary of State for the Colonies, and subject in many things to the regulations which he may frame. The terms of the Bill are widely drawn, and under their smooth official phrases there may lurk many opportunities for bureaucratic action. No doubt these matters will be brought up for elucidation when the Bill reaches its further stages in the House of Commons.

Certain powers and duties are specified in the Bill as being vested in the Central Emigration Authority. It is in the first place charged with the collection of information relating to emigration, and its dissemination amongst intending emigrants. Further, it will advise and assist intending emigrants, particularly those who have served in the war, their wives, widows, and dependants. This advice and assistance is to be given in accordance with regulations. Moreover, the authority will give advice and assistance to the Board of Trade and any other Government department on emigration matters, and particularly to the Board of Trade on questions connected with the accommodation on emigrant ships and the health of emigrants during the voyage.

Having set up this central organisation, the scheme would run a danger of falling through if certain private agencies were not brought under fuller supervision and control. The Merchant Shipping Act, 1894, contains provisions as to licensed passage brokers and their agents. These provisions are recast and extended so as to bring these persons under an elaborate code of responsibility to the central authority. We may, indeed, note *in extenso* the set of restrictions which are imposed by Clause 9 in respect to passages to "particular countries or places." It proceeds:—

"A passage broker or passage broker's agent—

"(*a*) Before issuing to any person a ticket for a steerage passage to any country or place to which this section applies, shall give not less than seven clear days' notice to the Authority, which notice shall specify correctly the name, present address, and proposed destination of the person to whom it is proposed to issue the ticket;

"(*b*) Shall take all necessary steps to bring to the notice of an intending emigrant to any country or place to which this section applies, any publications of the Authority which affect the case of that emigrant, and shall not issue or provide a steerage passage ticket to any such country or place, unless the ticket is endorsed with a statement signed by the intending emigrant that the said publications have been brought to his notice;

"(*c*) Shall not issue or otherwise bring to the notice of any intending emigrant to any country or place to which this section applies, any publication or other written information relating to emigration (except official publications of any Government department or of the government of any part of His Majesty's dominions or of any territory under His Majesty's protection), except in accordance with regulations to be made for the purpose by the Authority; and

"(*d*) Shall, as and when so required by general or special notice of the Authority, furnish to the Authority in such form as the Authority may prescribe, a correct statement in writing of the amount received by him during any period specified in the notice by way of commission, bonus, or other remuneration from any source, on account of steerage passages to any country or place to which this section applies."

The clause proceeds to lay down that "the Authority may by order apply to any country or place, either the whole or any part of this section."

Emigration societies are also by the proposals of the Bill to be brought under control. It is indeed laid down that "a person or a society or association of persons, by whatever name called, shall not publish any literature or carry on any work or propaganda for the purpose of or in connection with the promotion of emigration or the furnishing of information or assistance to intending emigrants, unless the person, society or association is approved for the purpose in writing by the Authority and complies with such conditions as the Authority may by regulation prescribe."

Assuredly a very wide latitude is given under the Bill to the Central Emigration Authority to exercise a dominating influence in directing the flow of emigrant traffic. Doubtless the intention is the laudable one of inducing persons leaving these islands to settle in the overseas dominions of the British Empire. That is a natural tendency. When an elaborate Bill is introduced, evidently to be followed by a wealth of regulations, it is incumbent on Parliament to examine it carefully to see that harm is not inflicted by the interposition of officialdom which loves rigid uniformity rather than natural flexibility.

TAR OIL FUEL IN DIESEL ENGINES.

IT has been frequently asserted that the development of the Diesel engine for marine purposes is largely wrapped up in the problem of a cheap and well-distributed supply of fuel oil. At the present time, apart from the limitations of the supply in consequence of the war demands of the belligerents, a supply of fuel oil is only available at certain of the better-equipped ports, and at these, in view of their distance from the source of supply, the cost of the fuel militates against its extended use. For this reason, if for no other, shipowners hesitate to adopt the Diesel engine for large vessels making long voyages in seas which are more or less remote from the natural supplies of fuel oil. The same reason is urged against the adoption of the smaller motor ship for the coastal trade of this country, viz., the high cost of fuel oil. In fact, it may be said that, as far as this country is concerned, there has been a greater chance for the development of the higher-powered internal-combustion engine than for the smaller-powered type, because the former can be employed in trades which take the vessels near to the natural sources of supply, such as, for example, the Black Sea or the

Mexican Gulf, while the latter are, from the nature of the case, debarred from the advantages of a cheap supply of natural oil.

There has arisen, as a direct consequence of the war, a circumstance which may have far-reaching effects on the development of the low-powered Diesel engine, viz., the production in this country of a large amount of fuel oil from the distillation of coal. At the present time this "tar oil fuel," as it is called, is being produced in order to meet the ever-increasing demands of the Navy for a fuel oil which can be burned under boilers, and to counteract the effect of the huge demand caused by the war, and the restricted supplies of natural oil due to the tonnage shortage; but the time will come after the cessation of hostilities when the demand will fall off, and when the supplies of natural oil will be far less restricted than at present. At the same time, the home-produced supplies of tar oil fuel will still be available, and producers will be desirous of continuing to operate their plant as at present, and it may, therefore, be safely assumed that, provided suitable engines for consuming this tar oil fuel can be produced, such engines will have the great advantage of a cheap supply of fuel. Hence, we are led to the conclusion that, provided an efficient internal-combustion engine is available, it should be very widely adopted for the propulsion of coastal vessels, river craft and barges, in view of the well-known and proven advantages of this type of engine for the propulsion of small craft. That such an engine would be of the Diesel or the semi-Diesel type, goes without saying, and it is interesting to note that already a large amount of experimental running and research is being carried on with a view to satisfactorily adapting engines of these types to run exclusively on tar-oil fuel.

At a recent meeting of the Diesel Engine Users' Association some very interesting details were given of the work which is being carried out by members of the Association, with a view to employing tar-oil fuel in existing engines; and whilst, of course, experiences were bound to differ, it appears from a careful consideration of the statements made by the different speakers that three principal troubles have to be overcome. These are ignition troubles, exhaust valve troubles, and pulveriser troubles. With regard to the first, these are due to the fact that whereas the ignition temperatures of petroleum oils are generally below 570° Fahr., in the case of tar oils they are in the region of 930° Fahr. Various methods have been devised to surmount these ignition troubles. Thus, in some engines, pilot ignition pumps are fitted so that the engine can be started up on petroleum oil. This has the double disadvantage of rendering the engine unduly complicated, and of necessitating the carrying of two varieties of fuel oil. In other engines a higher compression pressure is provided, sometimes up to 700 lb. per sq. in., the resulting higher temperature of the air being sufficient to cause an easy ignition. This, however, has the disadvantages of requiring a higher blast pressure and of increasing the stresses in cylinders and pistons to a very serious extent. The most satisfactory method put forward was the pre-admission of a small quantity of the charge during the compression stroke, thus augmenting the heat of compression; this method having the additional advantage of enabling the engine to run satisfactorily at low loads, it having been found difficult to do so when tar-oil fuel was used in the ordinary way. The trouble with exhaust valves is largely due to the fact that only a low proportion of hydrogen is present in tar oils, and that they are therefore liable to deposit carbon, which results in hammering out of exhaust valve faces, and in some cases in seizure of the exhaust valve stem. Hot working tends to prevent the deposition of carbon, and, therefore high compressions are advocated. Finally, with regard to the choking of the pulveriser, although this trouble is frequently met with, it is felt that it is not of a serious nature, and will be readily overcome by the modification of the pulveriser design, or the adoption of higher blast pressures.

It will thus be recognised that the attempts to utilise coal tar oil in Diesel engines are meeting with a large measure of success, and that before long the same degree of reliability will be obtained with this home-produced fuel as with the natural petroleum fuel; and when such is the case, provided also a cheap supply of tar-oil fuel is maintained, there should be an extensive adoption of engines of this type for the propulsion of small craft.

STEAM TURBINE BLADING.

IN steam turbines of the modern type through which considerable powers are being developed by units of relatively small dimensions running at high rotative speeds, severe stresses are brought to bear on the blading and other moving parts which cannot be neglected, and to properly proportion these to withstand the loads acting on them it is essential to obtain some knowledge of the magnitude of these forces. The turbine blades are subject to high bending stresses under the action of the steam, together with centrifugal stresses the magnitude of which depends chiefly on the speed of rotation. The forces due to the action of the steam are those due to changes in velocity of the steam in passing through the blading, and act in both the axial and tangential directions, together with the thrust in the axial direction produced by differences in pressure over the blades. The magnitude of the dynamical forces depends directly on the changes in velocity and also on the quantity of steam passing, and are usually expressed by the formula $L=\frac{MV}{g}$, where M is the weight of steam passing in lb. per second, V the total change in velocity of steam through the blading, L the load in lb., and g the acceleration due to gravity.

To the axial thrust must be added that due to any pressure difference which occurs over the annular area of the blades. To obtain an accurate measure of the bending stresses, it is necessary to determine the principal axes of the blades under consideration and the strength moduli about these axes. These axes may be determined by constructing the ellipse of inertia, or momental ellipse, as it is generally termed, of the blade shape, by the well-known rules given in most works on mechanics. This operation is somewhat tedious, but the work may be considerably reduced by the aid of an integrator, if the blade be drawn to a large scale. Having obtained these principal axes, it is now necessary to resolve both axial and tangential forces into components parallel and at right angles to the principal plane of bending, from which the component bending moments may be found, and if these be divided by their respective strength moduli the result will show the magnitude of the component bending stresses. The resultant skin stress on the blading material due to bending action is found by adding the component axial and tangential stresses. With blades in which the entrance and exit angles do not differ greatly, the principal plane of bending will lie approximately in the plane of rotation, and for all practical purposes may be taken in this direction for computing bending stresses. Where blades, however, are unsymmetrical in shape, it is best to obtain the true plane by means of the inertia ellipse. With modern turbines of both impulse and reaction types, the practice is to adopt certain standard shapes, but of varying widths, the dimensions for a particular shape being a definite proportion of its width. By this means the values of the inertia moment and strength moduli can be found for any width of blade, if these values be known for one particular blade of the same shape. Blades of similar proportions have moments of inertia which vary directly as the fourth power of their widths, while their strength moduli vary as the cube of these dimensions. Since the pitches of blades are also in proportion, the bending stresses would be inversely proportional to the square of the blade width. In addition to the bending stresses there are those set up by centrifugal action due to rotation which must be added to the former to obtain the total stress. The centrifugal stress is calculated from the formula $f=\frac{wv^2}{Agr}$, where w is the weight of one

blade in lb., v is the mean speed of rotation in feet per second, A the area of blade at root in square inches and r the mean radius of blade circle in feet. In *Engineering* of April 26, a valuable contribution on this subject is made by Mr. Gerald Stoney. Various formulæ are given by the author for determining rapidly the blading proportions of both impulse and reaction turbines. The author points out the necessity of making all blades of ample proportions to secure the necessary stiffness to avoid vibrations. Periodic vibrations with high speed turbines must be avoided, and this can only be attained by using blades with high natural periods and reinforced by lacing strips in long blades. An interesting point was raised by the author regarding these lacing strips; it is often assumed that these contribute greatly to the strength of blades, but such is not the case, as sufficient rigidity is not obtained to guard against small movements. These lacing strips, however, add greatly to the general stiffness of the blades and increase their period of vibration.

PUBLICATIONS RECEIVED.

[A short notice of any publication does not necessarily preclude the subsequent appearance of a longer review.]

Iron Corrosion: Anti-fouling and Anti-corrosive Paints. By Louis Edgar Andes. Second English Edition, revised and enlarged by H. B. Stocks, F.I.C., F.C.S. London: Scott, Greenwood & Son, 8, Broadway, Ludgate Hill, E.C.4. $5\frac{1}{2}$ in. × $8\frac{7}{8}$ in. × $\frac{3}{4}$ in. 300 pages, with 62 illustrations. Price 15s. net.

A Treatise on the Principles and Practice of Harbour Engineering. Second edition, thoroughly revised throughout and greatly enlarged. By Brysson Cunningham, D.Sc., B.E., F.R.S.E., M.Inst.C.E. London: Charles Griffin & Co., Ltd., Exeter Street, Strand, W.C. 2. $9\frac{1}{4}$ in. × $6\frac{1}{4}$ in. × $1\frac{1}{4}$ in. 377 pp. with 27 plates and 263 illustrations. Cloth, 25s. net.

Directory of Shipowners, Shipbuilders and Marine Engineers, 1918. London: The Directory Publishing Company, Ltd., 15, Farringdon Avenue, E.C.4. $5\frac{1}{2}$ in. × $8\frac{1}{2}$ in. × $1\frac{1}{2}$ in. 747 pages. Cloth, 15s.

This directory, which is of the greatest value to all firms in any way connected with the shipping and shipbuilding industries makes a welcome reappearance. Despite the difficulty of compiling a directory of this nature in such times as these, it has been brought thoroughly up to date as far as possible, and a list of Consulting Marine Engineers and Naval Architects is included.

This is the sixteenth year of publication, and the proprietors and all concerned are to be congratulated upon the successful reappearance of the directory. The revision at this time when the shipping and shipbuilding industry is working under such abnormal and trying conditions can only have been accomplished with the greatest difficulty.

Labour and Capital after the War. By various writers. With an introduction by the Right Hon. J. H. Whitley, M.P. Edited by S. J. Chapman, C.B.E., Professor of Political Economy in the University of Manchester. London: John Murray, 50A, Albemarle Street, W. 1. 5 in. × $7\frac{1}{2}$ in. × $1\frac{1}{8}$ in. 280 pp. Cloth, 6s. net.

It is vaguely realised that our power to recuperate economically after the war will depend very largely upon the relationship which will exist between "Labour" and "Capital," and the contributors to this volume, although they approach their subject from many different standpoints, are all of them united in their belief that a closer unity between the two is essential for the welfare not only of themselves, but also of the State. There are eleven essays in all from the pens of persons representative of many phases of our industrial life. The view point of the Church is voiced by the Bishop of Birmingham; Capital is represented by Lord Leverhulme and Sir Hugh Bell, amongst others; Labour's opinion is expressed by Mr. J. R. Clynes, M.P., and Mr. F. S. Button, who was at one time a member of the executive of the Amalgamated Society of Engineers; and the Women's point of view is also put forward. It will be readily understood that many conflicting opinions are expressed in view of the diversity of outlook of the writers, but the impartial reader, having thus had put before him evidence from all sides, will be the better able to come to a sound judgment upon what is after all one of the most vital questions of to-morrow. If we are assured of industrial peace, industrial prosperity is also assured.

"The Times" History and Encyclopædia of the War. Part 195, Vol. 15. The Shipping Problem. London. *The Times* Publishing Company, Ltd., Printing House Square, E.C. $11\frac{3}{4}$ in. × 8 in. × $\frac{1}{8}$ in. 40 pages, with numerous illustrations and diagrams. Price, 9d. net.

In an earlier part of this encyclopædia there was published an account of the dilatory and inadequate attempts which were made to solve the British shipping problem during the first two and a-half years of war, and the part just issued reviews the developments of the shipping problem during 1917 and the early part of the present year. It deals with the period of unrestricted submarine activity during which the shipping losses reached their maximum and steadily fell away again, while the shipbuilding output, though increasing, was yet considerably behind what was needed for safety. The intricate history of this period—the work of the Ministry of Shipping and of Shipbuilding Advisory Committees, the revival of the post of Admiralty Controller, new requisition schemes, and so forth, is reviewed, and the great difficulties of the problem indicated. In conclusion, an account of the public demand for full publicity regarding losses and construction is given, together with its final satisfaction by Sir Eric Geddes' statement of March 20, the consequent impetus given to building, and the appointment of Lord Pirrie as Controller-General of Merchant Shipbuilding. The narrative is copiously illustrated with varied scenes in British shipbuilding yards, from laying the keel through all the different operations to launching, construction of standard ships and concrete ships, salvage work and repairs, and includes many portraits of those connected with the shipbuilding campaign.

The official charts showing the shipping losses and output both of the United Kingdom and of the world, during the three and a-half years of war, are also given, and the whole forms a comprehensive survey of one of the most vital phases of the war.

FIRE ON SS. "EDAVANA" OFF BOMBAY.

We have received from our contemporary, *The Times of India*, photographs taken during and after the fire on the British ship *Edavana*, which occurred on September 20 last when the vessel was about 200 miles from Bombay. The *Edavana*, a vessel of 5,000 tons, was bound for Bombay and was empty, except for a few officials and military officers, the total on board with the ship's personnel being just over 200. At about four o'clock in the afternoon the alarm was given that the vessel was on fire amidships. According to an eye-witness the fire spread with extraordinary swiftness, clouds of dense smoke permeating the gangways, so that within a short while people were unable to approach their cabins and save their chief belongings. For a while, however, the fire kept to one side of the ship, and the occupants of the cabins on the other succeeded in rescuing their possessions and landing them on deck, most of them, however, being afterwards burnt.

Fortunately the weather was beautifully fine, with a calm sea, and eight boats were lowered into the water and several rafts, sufficient to accommodate everybody. The last boat-load left the vessel about six o'clock, two hours after the discovery of the fire. About 12 hours elapsed before, next morning, two vessels of the Royal Indian Marine arrived and took aboard the survivors, who, thanks to the warmness of the weather, had spent the night with a minimum of discomfort.

The burnt-out hull of the ship, with the fire still smouldering, was towed to Bombay under orders of the Senior Naval Officer and successfully beached in the harbour. Her holds have been completely gutted, her hull, though badly damaged, being intact. It is stated that her engines and boilers did not sustain much damage. The photographs referred to above are reproduced on page 574.

Norwegian Amalgamation.—According to *Goteborgs Posten* the two large Norwegian owners Skandinaviska Ost-Afrika Line and the Manchester Company have decided to amalgamate, and to raise their joint capital from £331,000 to £662,000.

SHIPBUILDING COSTS AND ESTIMATES.*

I.—COSTING.

Costing is a system of recording results of work done, so that a firm is able to tell—

(1) The cost of producing any article made.

(2) The result of any manufacturing operation or of a contract.

Cost accounts deal entirely with the practical side of an industrial concern, and any tendency towards their being mixed up with the general book-keeping records of a company should at once be eliminated, as it only leads to delays and all sorts of complications. The figures in the two sets of accounts should agree, and the different books fit in sufficiently to permit of the totals being checked. (See specimen outline of cost of material summary on page 572.)

Briefly, the chief difference between cost and ledger accounts is that while costing aims or endeavours to arrive at the net result of manufacturing by analysis—that is, to show what it costs to produce any specific item of work—the commercial accounts group together the result, not of each manufacturing process, but of each class of expenditure. The financial books will record the incomings and outgoings of cash and material over a given period, but the cost books, by analysis and grouping, will show the value of each important section of work done.

Generally, lines of organisation rather than similarity of products provide the best basis for a cost accounting system. Industries are, therefore, classified in this way and methods indicated which are applicable to particular businesses along these lines. Cost accounts all under two broad divisions—the *first* aims at ascertaining profit or loss on each particular contract; and the *second* ascertains how the cost of producing a commodity compares with its market price, both items being naturally of a fluctuating character.

In operation, the above systems vary considerably. In small concerns, or where the detailed information required is of a limited character, the costing accounts are simple and the work demands little skill. In other undertakings, however, costing may be quite an elaborate business, requiring considerable skill and technical knowledge of the work if fallacious results are to be avoided.

Features of a good costing system.—It must be :—

(1) Simple in design and economical in its operation.

(2) Reliable in its methods and clear in its results.

(3) Arranged so that records will be kept up to date.

What is wanted is to aim at a system which will secure, with the minimum of well-directed work, the most reliable results.

Cost accounts should be so arranged as to be easily followed by any man conversant with the business. Over elaboration of detail must be guarded against and care taken that the results obtained are value for the labour spent in getting them. The system should not come under the reproach that more money is spent finding out what the article cost than in making it. On the other hand, it should be recognised that the less detail a firm keeps the more dependent do they become in their search for new work upon some particular member of their staff.

As the human element is a very large factor in the success of any system, and the men working it may not be always so thoughtful and analytical as one might expect, it is very necessary that the methods adopted should be reliable and the results clear.

It has been said that "news" and not "history" is what a good costing system should supply, and any system where records are not kept up-to-date with totals readily available loses quite half its usefulness. Comparisons with past results are continually required, and directors are often unsympathetic towards costing, largely because, as a rule, when information is wanted, it is rarely available at the time, and when produced later is of little use, as the occasion which called for it has passed. Again, if the accuracy of the final figures is to be assured, these should be compiled as quickly as possible after the contract is completed, so that any errors may be rectified while the work is fresh in the minds of all concerned.

The requirements of a good cost-keeper :—

(1) Speed and accuracy.

(2) Technical knowledge of the business.

(3) Perspective.

As comparisons of present with past results are continually required, usually at very short notice, leaving little time available for checks, the need for speed and accuracy is obvious.

Possession of the second qualification is very desirable, otherwise stupid mistakes are likely to occur. A mere name knowledge of the articles produced is not sufficient to ensure correct records. This usually indicates that costing is being done in a routine fashion without thought or interest. When a man suggests a credit for waterways because he knows launchways have been credited, or extends two steel H.P. as two horse-power instead of two hawse-pipes, or charges plates weighing 40 lb. per sq. ft., against a destroyer's cost, and sees nothing wrong, then the need of technical knowledge is evident.

The possession, or the cultivation, of the faculty of perspective by men engaged in costing will go a long way to ensure the efficiency of any system. The ability to know how much time and labour may reasonably be spent in compiling records in relation to their ultimate value cannot be over-estimated. A system may owe its success or failure to the presence or absence of this qualification in its working. The chances are, that where the money spent on costing is out of proportion to the value of the records obtained, it is not so much a defect in the system as lack of perspective on the part of those responsible for carrying out the work.

Advantages of a good costing system :—

(1) It enables detailed comparisons to be made between the estimated and the actual cost of contracts, as well as between past and present results and output of work in each trade.

(2) It encourages greater all round efficiency in working by showing where output may be increased and production cheapened.

(3) It forms a basis for estimating.

How to get the best results from a costing system :—

(1) As far as possible costing work should be made self-contained and independent of any outside department for its data.

(2) Work should be arranged to be as interesting as possible.

In many firms costing is in the hands of one man with possibly an assistant to help him. The duties are practically limited to the collection of figures from other departments and their allocation against the respective cost divisions.

While it is recognised that in small concerns it may not be possible to depart to any great extent from the above method, still such a system rarely gives the best results. It is too dependent on other departments, which are often unsympathetic with the aims and objects of costing, for figures, while much of the cost-keeper's work is uninteresting and mechanical.

Where possible it is advisable to make all clerks handling material for vessels *cost clerks*. A man should have a section of the work, one, two or more trades to look after, according to the size of the concern and the extent of its output; and he should carry through practically all the work, pricing, abstracting, unimportant correspondence regarding tenders and delivery, &c., as well as be responsible for the stock. Under the supervision of a responsible head cost clerk, the work of subordinates is thus made more complete, variable and interesting, and better final results are likely to be obtained.

In the past there has been too much secrecy about methods of cost keeping in shipbuilding. While it is in order to keep the result of the actual workings of a firm secret, yet it would be to the advantage of the industry if all shipyards had a fairly detailed costing system in operation. If some standard system could be adopted,

* Abstract of a paper read before the Greenock Society of Shipbuilders and Engineers by Mr. Jas. M. Robertson.

FINAL MATERIAL SUMMARY OF A PASSENGER AND CARGO VESSEL.

(470 ft. × 57 ft. × 39 ft. 6 in. moulded.)

Date.	Material Charged Direct to Vessel.						Material Issued from Stores.														Sundry Cash Items.	Employers' Liability and National Insurance.	Monthly Total.	Grand Total.
	Steel.		Hull Castings.	Deck Machinery.	Outfit, &c.	Total.	Rivets.	Timber.		Paints, &c.	Smith Work.	Plumber Work.	Rigging Material.	Hardware, &c.	Electrical Fittings.	Mechanics' and S.I. Material.	Total.							
	Weight.	Value.						Carpenters.	Joiners.															
	Tons.	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£				£	£	£	£
	3,474	22,168	832	2,692	10,578	36,270	1,320	1,990	3,120	1,080	1,190	1,605	220	1,040	1,345	1,300	14,210				830	640	—	51,950

Issues from Stores.—Above figures are posted fortnightly or monthly from separate books and should be checked with ledger figures. These separate books contain suitable summaries of value of material charged through Store sheets.

Material charged direct.—Detailed particulars of this material are available in suitable form. Hull Castings (or Forgings) include : Stem, Stern-post, Propeller Brackets, Rudder Frame, &c. Deck Machinery includes : Winches, Cranes, Windlass, Capstan, Steering Gear, Refrigerating and Electric plants, Disinfector, &c. Outfit, &c., includes : Anchors and Cables, Upholstery, Boats, Cooking Gear, Lamps, Chandlery, Nautical Instruments, Canvas Gear, Hawsers and Reels, &c. Sundry Cash Items include : Classification Fees, Passenger Certificate, Hull Insurance, Towage, Cranage, Dock Dues, Purveying at Trial, Freight, &c.

whereby all came into line in their methods of charging material and labour, and dealing with establishment charges, shipbuilding would benefit. Much undue competition for new work would thereby be eliminated, as the firm who contracts for new work at a ridiculously low figure to its later regret is not as a rule the one in possession of the best costing system.

Shipbuilding Cost Accounts.

A separate account for each contract is raised so that the profit or loss can be readily ascertained, while over and above this a detailed analysis of all work done and material supplied is kept in a suitably arranged form. Shipbuilding is too extensive in its operations to lend itself to the same accuracy of costs as are associated with certain other manufacturing concerns. This fact should be recognised and efforts made to strictly limit probable errors without an undue expenditure of time and labour. As values and quantities are usually large, a small percentage of error in no way detracts from the value of the costs.

Material.

The first subdivision of the material naturally falls under that of trades, and lump-sum figures are available at the completion of a contract showing the respective trade costs. These broad divisions are further subdivided usually on a job basis according to plan, and lists are issued to the drawing office and all other departments concerned. Costs of every important section of work done by each trade are thus arrived at. Diagrams shown with the estimating section of this paper suggest suitable forms for subdividing material and wages in each trade.

The proportion of material purchased for purely stock purposes is generally very small. As far as possible all material is specified against particular work in hand, and debited direct to the ship when invoiced. However, certain materials such as rivets, hardware, electrical fittings, paints, timber, &c., do not readily lend themselves to direct charging, as they can only be ordered in approximate quantities for each ship.

To ensure greater accuracy and avoid possible credits or debits at the completion of the vessel, it is better to debit this material to a stock or store account, and have it charged against the ship when requisitioned for her by an order from the foremen, the store account being then credited with the amount. All material ordered is usually according to specification received from the drawing office, which should mark thereon the job and cost division number it is to be charged against. A summary may be drawn up on the lines shown in the table on this page.

Wages.

Work is usually done under one of two wage payment systems—time rate or piece work. While it is not so difficult to get a record of jobs done on piece as on time, yet the importance of accuracy in allocating jobs against their respective classification number is not generally and fully recognised. When one considers the time and labour spent in compiling data, it is surely false economy to adopt any other than the best possible measures to ensure that work be correctly charged.

The best results are usually obtained by a timekeeper going round the men at least once a day and taking a record of their work. If possible a tradesman thoroughly conversant with the work should be employed. If the interest and sympathy of the foreman can be enlisted to roughly scrutinise the allocation of work done, then greater accuracy will be ensured. As far as possible job classification numbers should be standardised, so as to repeat themselves and stand for the same section of work in successive vessels.

The extra hours paid to men, over and above those actually worked when employed after hours, should be kept under a separate acceleration number and charged as a "breakage" to cost of vessel. On the following page an outline wages summary is shown.

Wages Summary showing final and weekly totals of labour on a Cargo and Passenger Vessel of 470 ft. × 57 ft. × 39 ft. 6 in.

Weekly totals should be shown in red throughout and kept as set out in Iron Trades; progressive totals in black. This book can be arranged on the loose-leaf principle if desired.

	£ s. d.
Ironworkers' foremen*	124 10
Angle-iron smiths ..	227
Platers, time	124 12
Platers, piecework ..	5,225 81
Riveters, time	1,187 61
Riveters, piecework	4,900 73
Caulkers, time	250
Caulkers, piecework	1,390 537
Drillers, time	Nil.
Drillers, piecework ..	1,718 90
Weekly Total	699
Total	15,763
Carpenters ..	3,267
Carpenters' labourers	1,000
Stagers	301
Riggers	88
Sawyers	40
Joiners, &c. ..	5,720
Joiners' labourers	294
Polishers	199
Pattern-makers	91
Sheet-iron workers ..	510
Painters, time	1,015
Painters, piecework	254
Plumbers	970
Mechanics	550
Smiths, time ..	403
Smiths, piecework	553
Draughtsmen	700
Electricians ..	500
Cementers	97
Weekly Total	1,397
Total	32,315

* Ironworkers' foremen are not allowed to exceed 3% of the total wages paid to Iron Trades. Other head and shop foremen are debited to their respective trades *pro rata* on the weekly amount of wages charged against each vessel.

To keep all vessels on the same basis the total charges for respective foremen are limited to a fixed percentage of the total wages paid. This percentage is usually based on the assumption that works produce 75% of their possible output.

Establishment Charges.

Establishment charges embrace expenditure incurred in :—

(*a*) The necessary carrying on of a business ;

(*b*) Increasing the production power of labour ;

and the particular items of outlay in each case cannot be readily allocated directly against work in progress. Among other things this "oncost," as it is sometimes called, should cover for depreciation, obsolescence, and certain capital risks, but not for any remuneration on capital invested in the business.

So far as shipyards are concerned, the labour basis commonly in use, though not by any means accurate, may be taken on the whole as the best. It has the merit of simplicity in its favour, and it certainly enables the estimator to deal with this part of his work readily. In allocating charges over actual costs, however, some discrimination might be made between the wages paid to purely hand workers on board a vessel at a fitting out basin, and men employed in the works using space, plant and power.

While the allocation of charges on a labour basis appears on the whole satisfactory, some further division of charges would seem necessary. A firm should know what proportion the fixed or irreducible part of its cost bears to the total.

Fixed and fluctuating charges.—The practically fixed portion would include such items as rent, rates and taxes, general management expenses, office salaries, building repairs, depreciation, and sundry expenses.

The fluctuating portion moves broadly in harmony with output and would include plant repairs and renewals ; electric current and power, coal, coke and gas, fuel oils, naphtha, petrol, oxygen, drillers' grease, wages of storemen, winchmen, cranemen, stationery, &c.

The benefit of this division between fixed and fluctuating charges becomes apparent if a firm has to cut in very keenly for work. Assuming the net cost without profit of a ship at £100,000, of which £20 000 is charges—£7,000 of this £20,000 is fluctuating, and the balance £13,000 is fixed, charges. At a push it may pay a firm to accept, rather than decline this order at, say, £93,000, as by so doing they receive the direct cost of material and labour, viz., £80,000 plus the £7,000 fluctuating on cost, plus £6,000 towards the reduction of their fixed charges, which are running on whether they get work or not.

The question of charges does not as a rule come under the review of the average shipbuilding costing department. Their work is usually limited to prime costs, *i.e.*, dealing with material and labour only. It is suggested that a firm might with advantage consider the advisability of bringing this work more within the scope of costing with a view to keeping a better record of its incidence and securing a more equitable distribution of its totals over the work done. The following summary of items which it is considered are best dealt with in charges may be useful :—

ITEMS SUGGESTED TO BE INCLUDED IN ESTABLISHMENT CHARGES.

The Use of : Buildings, berths, machinery, yard cranes, derricks and gear, uprights, shores, stage planks, keel blocks, launching gear, small tools, service bolts and wedges.

Power for, and use of : Acetylene, hydraulic, electric and pneumatic plants.

Salaries and wages of : Officials, clerks, typists, yard engineers, machinemen, electricians, labourers, watchmen, furnacemen, gatemen, storekeepers, timekeepers, messengers, attendants, &c.

Cost of : Rent, feu duties, rates, taxes, gas, electric light and power, naphtha, lubricating and fuel oils, drillers' grease, petrol for blow-lamps, yard insurance, office cleaning and purveying, D.O. material, data and records, coal and coke, waste, stationery, packing materials, telephones, telegrams, postages, advertising, charities, &c.

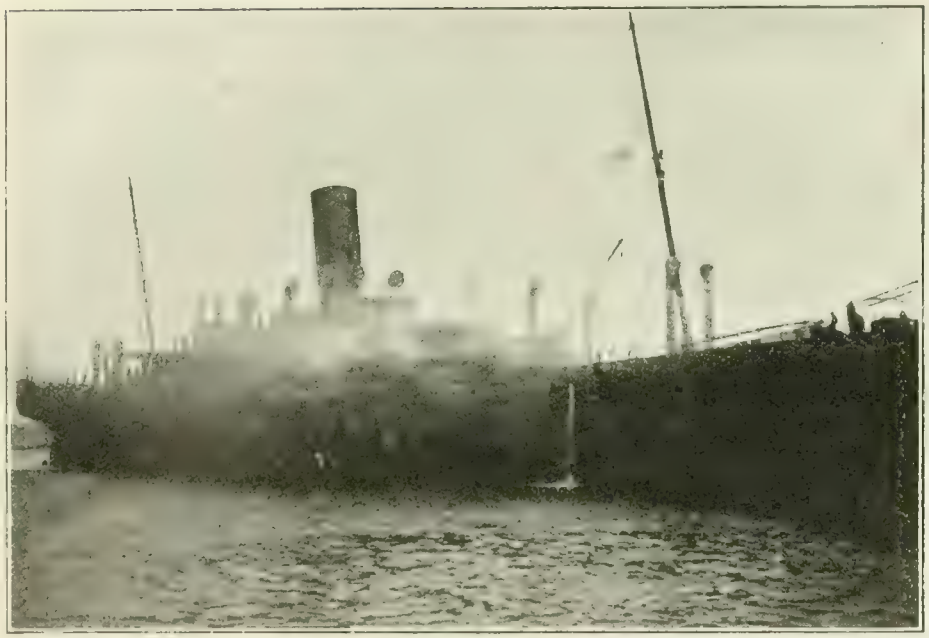
Suggested that : Employers' liability and national insurances be debited either monthly or quarterly direct to vessel, under Material, as a percentage on wages spent.

To sum up, it is held that a cost system should be considered an investment and not an expense. No claim is made that cost accounts will in themselves cure inefficiency in management or permit a concern being run without a manager, or save a business from failure. It is contended, however, that the system will supply real live information which, if properly used, will do much to promote and aid efficiency ; while a firm which knows actually where it stands from week to week is much less likely to become bankrupt than one which is directed during the year by guess work.

(To be concluded.)

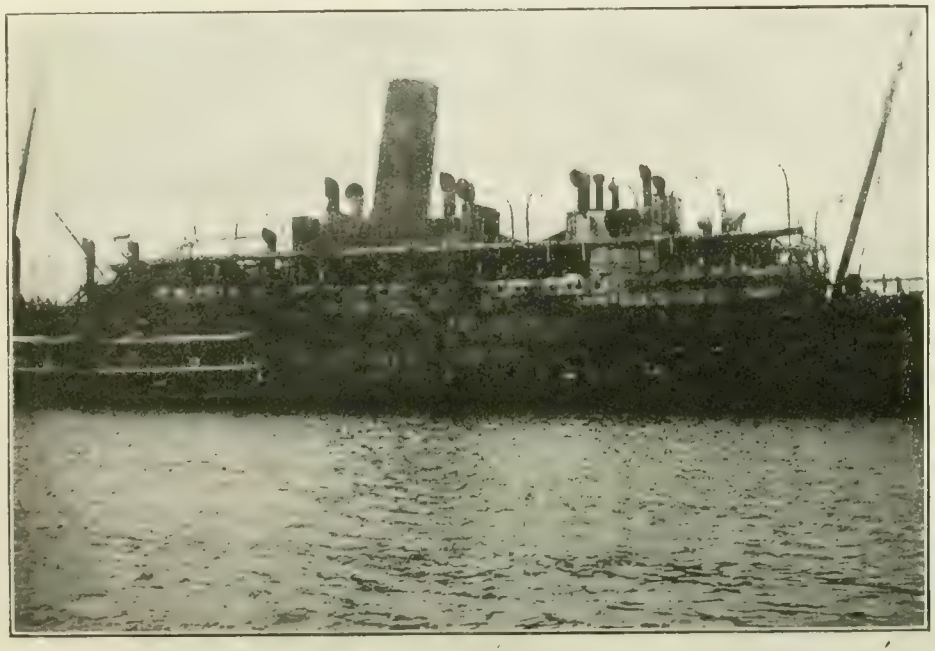
SPANISH SHIPPING CONTROL.—A Reuter message from Madrid states that delegations of Catalonian and Viscayan shipowners arrived there in order to set forth their views on the Government's plans for taking over the merchant fleet. It is understood that the Government will abandon its intention of completely taking over merchant shipping, and will limit its intervention to the control of freights and voyages.

THE FIRE ON SS. "EDAVANA," OFF BOMBAY. (*See page* 570.)



SS. "Edavana." View of the Vessel taken while the Fire was raging

SS. "Edavana." Another view of the Burning Vessel.



SS. "Edavana" as she appeared after the Fire was Subdued.

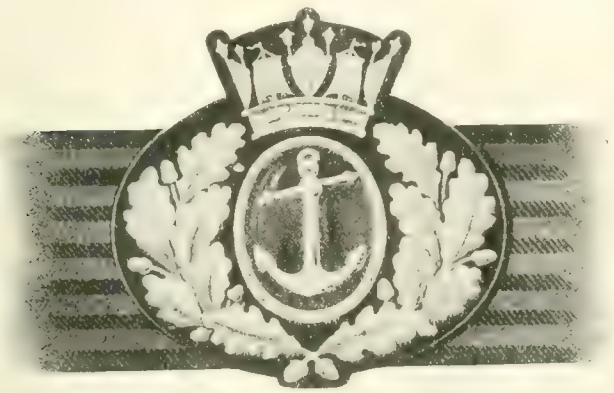
SS. "Edavana" being Towed into Bombay.

A STANDARD UNIFORM.

REPORT OF THE COMMITTEE ON A STANDARD UNIFORM FOR THE MERCANTILE MARINE.

The report of the Committee appointed by the Board of Trade, on March 30, 1917, to advise as to the uniform to be adopted as the standard uniform for the mercantile marine, has now been published. The majority report is signed by Capt. A. H. F. Young, R.N.R. (chairman), Lord Inchcape, Sir W. H. Raeburn, Mr. G. C. L. Maunder, Comdr. Dudley North, R.N., Mr. Richmond Walton, Mr. John Todd, and Mr. David Bramah. Capt. A. B. Toms and Capt. H. Holttum sign this report subject to certain reservations.

The report points out that the question of a uniform for the mercantile marine first came into prominence after the outbreak of hostilities. It had not hitherto been the general practice for officers of the mercantile marine to wear their uniforms on shore, except, possibly, when on ship's business in or near the docks, or when going to their owner or owner's agents; but, with the recruiting campaign, they began to come ashore in uniform to indicate that they were on a service of national importance, and, in the case of junior officers, no doubt to avoid inquiries as to why they were not in the Army. A variety of uniforms, many of which closely approximated to that worn in the Royal Navy, led to confusion and difficulties, and the Admiralty found it necessary to propose to shipowners that the use of the crown on their cap badge



Standard Cap Badge.

(known as the "Tudor" crown) should be discontinued, that the gold embroidery on the cap peaks should be plain, and not oakleaves, or any similar pattern, that the gold rank stripes on the sleeves should not be as wide as ½ in., and that the circle or "executive curl" above the top stripe should be eliminated. The various officers' associations then represented to the Admiralty that the opportunity had arrived for adopting a standard uniform (on the understanding that characteristic naval emblems should be eliminated) in view of the fact that certain international complications had arisen as to the precise status of mercantile marine officers.

Altogether, the views of 150 witnesses were obtained. After a careful consideration of their evidence, it was obvious that the great majority of mercantile marine officers were strongly in favour of a standard uniform. The principal reasons advanced by those witnesses in support of their views were that a standard uniform would raise the status of its wearer; that the mercantile marine had proved its great value to the country during the present abnormal times, and consequently should be afforded some definite recognition in the shape of a national uniform; that the fact of their being certificated officers (*i.e.*, holders of Board of Trade certificates) should be more clearly indicated by their uniform as constituting them officers of the mercantile marine in the first place, rather than employees of any particular firm; that no distinction should be made between officers of passenger and cargo ships, as they all hold identical certificates obtained under the same conditions; that many at present had to wear uniforms or badges which they considered as unsuitable; that confusion is caused through the multiplicity of uniforms; and, finally, that recognised standard marks of rank or position were desirable.

A minority of the witnesses, who were in the employ of large passenger-carrying lines, on the other hand, were desirous of retaining some mark on the uniform to indicate that they were in the employ of a particular company, on the grounds that the wearing of their company's uniform or cap-badge encouraged a feeling of *esprit de corps*, and that they could more easily recognise or identify brother officers in the same employ.

The Committee were also furnished with the results of the voting of officers available in home ports who belonged to the Mercantile Marine Service Association and the Imperial Merchant Service Guild. The following summarises the views of these officers:—

2,217 were in favour of a standard uniform.
52 were against the standard uniform.
293 were in favour of the "owners' emblem" in the cap-badge.
1,941 were against the "owners' emblem" in the cap-badge.
494 were in favour of the "owners' emblem" elsewhere.
1,618 were against the "owners' emblem" elsewhere on the uniform.

Concurrently with this, a circular letter was addressed by the Secretary of the Committee to all shipowners entered in Lloyd's Register as owning three or more merchant ships (other than small vessels) inviting their views. While the large majority of these shipowners who replied, expressed their concurrence in a standard uniform, they indicated in many cases a desire to retain their emblem in the cap-badge or elsewhere on the uniform.

Coat Button and Gold Embroidery for Peak of Master's Cap.

The Committee state that they have viewed with sympathy the desire of long-established ship-owning companies and firms to retain the symbol of their service which has been worn by their officers in the past and for which many officers express a preference at the present time, and have borne in mind the desirability of having due regard to economy in the design of the uniform and at the same time of making it worthy of the profession. They are of opinion that the uniform suggested is one that will generally be acceptable to those entitled to wear it and will tend to the increased unity and status of officers of the mercantile marine.

The Committee, therefore, recommend that—

(1) A national standard uniform be adopted for the mercantile marine.

(2) Any existing shipowning company or firm shall have the option of retaining its cap-badge for the use of masters and officers whilst employed on board ship, or when engaged on the ship's business ashore, but should any officer desire to wear uniform on shore on other than the ship's business, it shall not be any other uniform than the standard national uniform in its entirety.

(3) The uniform shall, in all cases, whether worn with the standard cap-badge, or with the owner's badge as laid down in (2) above, be the prescribed uniform in its entirety.

(4) The standard cap-badge be as shown.

(5) His Majesty the King be prayed graciously to sanction the Naval Crown therein depicted for the exclusive use of the mercantile

marine, as it is understood that the Admiralty are willing to transfer the use of this crown to the mercantile marine.

(6) The uniform to be limited strictly to holders of Board of Trade Certificates (Deck or Engineer) in the mercantile marine, and to surgeons, pursers, and cadets (or apprentices) in the mercantile marine, as well as uncertificated junior officers qualifying for a first certificate.*

(7) The position or rank held on board the ship, and not the class of certificate held, determine the rank stripes to be worn (*e.g.*, a second mate who has a master's certificate can only wear the uniform pertaining to a second mate).

(8) An officer while not employed afloat shall be entitled to wear the uniform corresponding to the highest rank in which he has at any time been employed.

(9) It shall be an offence :—

(i) For any person (except surgeons, pursers, cadets or apprentices, and uncertificated junior officers qualifying for a first certificate, while on the books of any shipowner), not holding a Board of Trade certificate of competency as an officer (deck or engineer) in the mercantile marine, to wear the national standard uniform for the mercantile marine.

(ii) For any certificated officer (or surgeon, purser, cadet or apprentice, or uncertificated junior officer qualifying for a first certificate, entitled to wear this uniform) to vary it in any detail.

(10) If any person contravene the foregoing recommendation he shall be liable on summary conviction to the penalty laid down by Section 3 of the Uniforms Act, 1894.

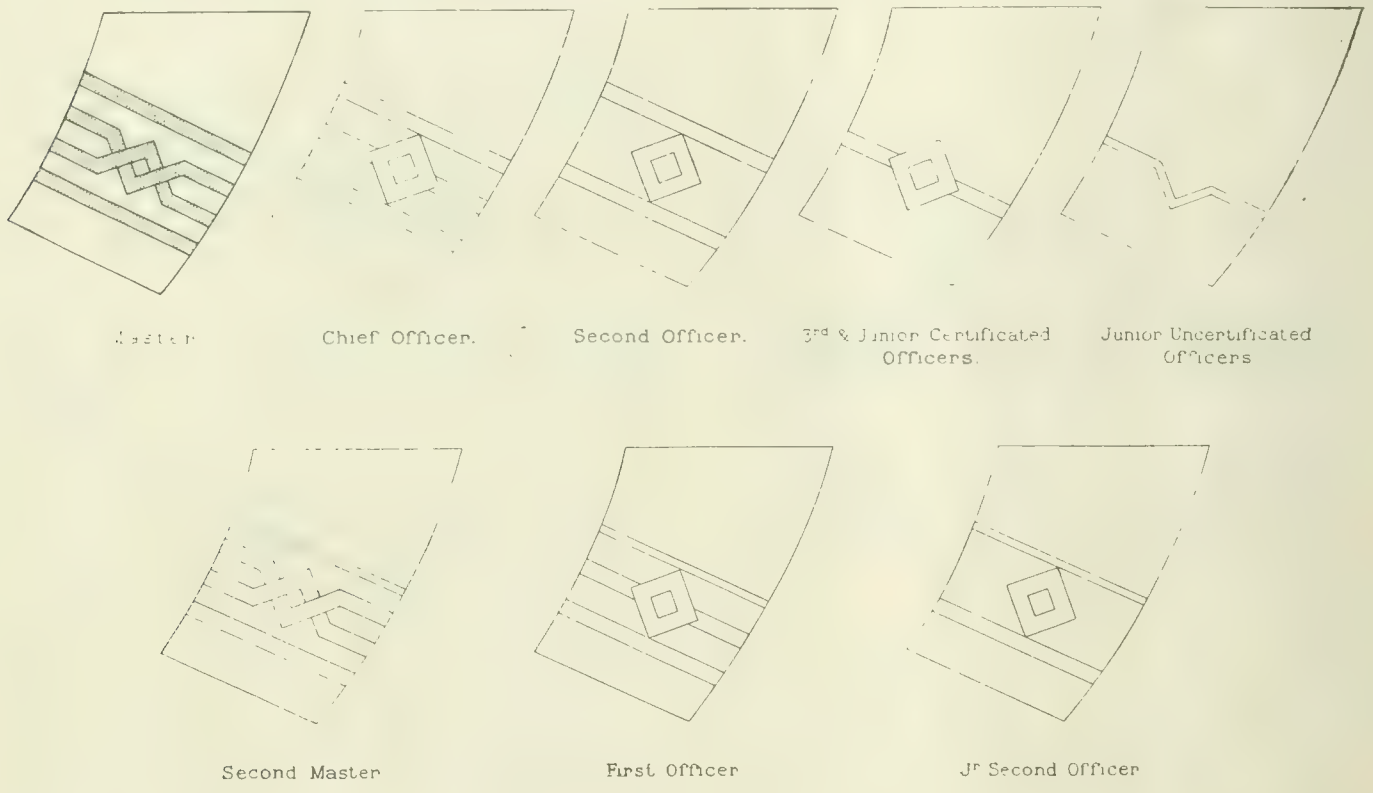
(11) Powers be sought to give statutory effect to the foregoing recommendations.

The reservation of Capt. Toms and Capt. Holttum concerns recommendation (2). They point out that, as representing the Imperial Merchant Service Guild and the Mercantile Marine Service Association respectively, they are " entirely opposed to officers being compelled to wear the emblem or flag of their owners in their cap badges when afloat, or ashore on ship's business, in conjunction with the standard uniform, which, in all other respects, is recommended by the Committee. It is manifest that a uniform which admits of different forms of cap badges being used in different shipowning companies—where such companies may so desire it—cannot in any sense be regarded as a standard uniform. The memorials as presented to the Committee by the Imperial Merchant Service Guild and the Mercantile Marine Service Association clearly indicate that, so far as the navigating officers of our merchant ships are concerned, they are emphatically and almost unanimously opposed to the wearing of any other badge whether ashore or afloat than the standard uniform badge which is recommended by the Committee. If a standard uniform is adopted, including, of course, the standard cap badge which the Committee recommend, . . . the Board of Trade should make its adoption universal whether ashore or afloat, and especially so in regard to the standard uniform cap badge which is the dominant feature of the uniform."

The minority report, referred to as " by the two representatives of the Liverpool Steamship Owners' Association," is contributed by Mr. S. J. Lister, of the Cunard Line, and Major H. Maitland Kersey, D.S.O., of the Canadian Pacific. Mr. Lister points out that he is not convinced that the adoption of a standard uniform is either necessary or desirable. " Prior to the war," he continues, " it was a very exceptional occurrence for the officers of the mercantile marine to wear uniform except when engaged in their duties on board their steamers. With the outbreak of hostilities, many of the officers in self-protection found it necessary to wear the uniform on shore in order to show that they were engaged upon a service vitally necessary in the interests of the country.

" Representations were thereupon made by the Admiralty that some of the details of resemblance on the mercantile uniform with that worn in the Royal Navy should be suppressed. The Admiralty suggestions were not generally acceptable. It was then suggested that a standard uniform should be adopted for the mercantile marine which should be made the subject of Board of Trade Regulations.

" It is perfectly clear that the question of wearing or adopting



Deck Officers' Sleeve Badges of Rank.

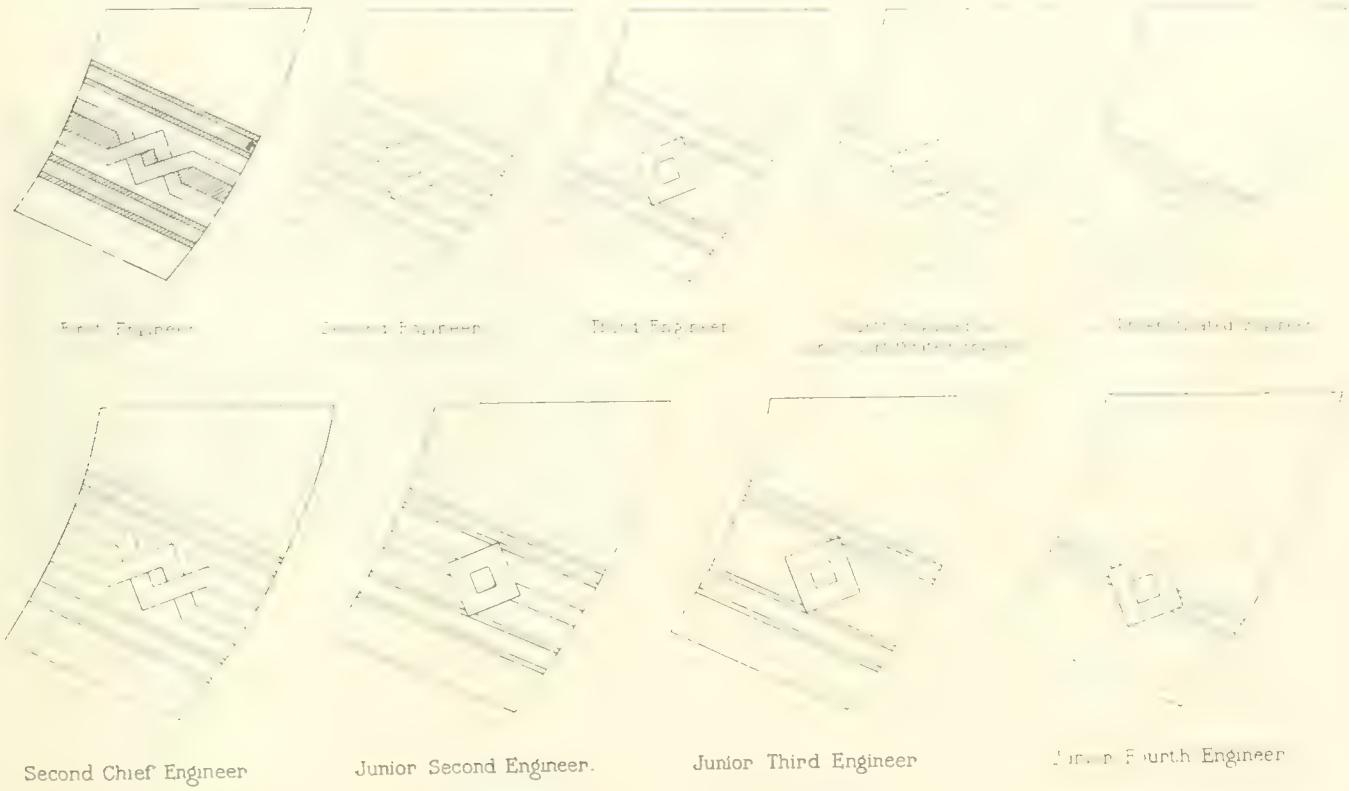
* A supplementary report prescribes uniforms for lower ratings.

a standard uniform has arisen entirely from war conditions which do not exist in time of peace.

"Objection has been raised to the wearing of owners' emblems on the uniforms of officers in the liner and passenger carrying companies. The demand for retention of owners' uniform is understandable from the point of view of *esprit de corps*—and every consideration should be given to this view. There is, however, danger of losing sight of the necessity for owners' emblems on uniform as far as actual working conditions on passenger steamers are concerned, and proper weight must be attached to this. In cargo steamers there may not be the same necessity, but in the interests of discipline both from the point of view of passengers as well as crews, where hundreds and sometimes thousands of lives are involved on one steamer, consideration must be given to the views expressed on behalf of liner companies.

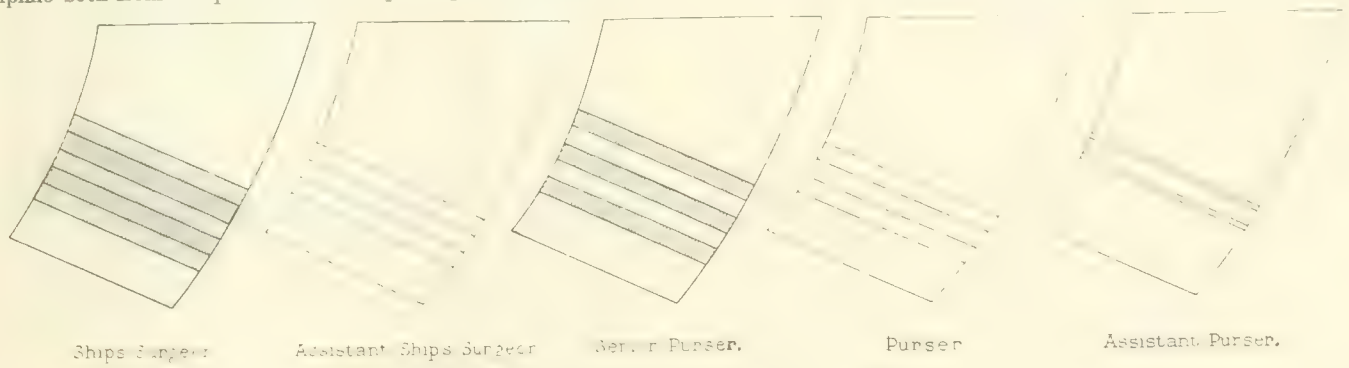
"It is difficult," he concludes, "to see how changes of uniform can be carried out during the war. Under peace conditions conflict with the Royal Naval uniform did not arise in the past and should not occur in the future."

Major Maitland Kersey concurs with Mr. Lister, and adds that he is of opinion that the figures put forward by the Imperial Officers' Guild and the Merchant Service Guild are not reliable, in that the numbers given in their statement as voting in favour of a standard uniform are only some 10 per cent. of the whole members of the Guilds. He is informed that some 5,000 officers and 3,000 engineers are serving in the Royal Navy to-day, most of whom have not been approached at all, and who certainly, in his opinion, will not desire, when they leave the Royal Navy, at the end of this war, to relinquish their rank and badges in favour of the proposed standard uniform and be unable to wear the uniform of the companies with whom they have previously served.



Engineer Officers' Sleeve Decorations.

"It has been contended by the representatives of the Guilds," he continues, "that the uniform of the big companies—some of them over 100 years old, is really a livery. We do not consider any officer in our employ would object to wear the 'livery' of their company, in which they have shown great pride in the past, any more than an officer in a regiment or a battalion would consider that in wearing the badges of that regiment he was wearing a livery, and it remains to be seen, after the war, whether officers—especially senior officers—in the large mail and passenger vessels, who hold high positions in the Royal Naval Reserve and therefore in the Royal Navy—during the war—would not prefer their own company



Sleeve Decorations for Surgeons and Pursers.

uniform to a standard uniform, which is open to anybody, whether he be British, Swede, Norwegian or Dane, with a Board of Trade certificate, especially when no distinction is made between men of a few years' service or a service of perhaps five-and-twenty years, nor in the class of vessels in which they have worked up to be seniors. In the Royal Navy this is compensated for to some extent by the possession of definite rank and seniority for pension.

"Prior to the war it was of very exceptional occurrence for officers of the mercantile marine to wear uniform except when engaged on their duties on board their steamers, and although perhaps temporarily during the war some of these officers do wear uniform, there is no doubt that after the declaration of peace they will cease to do so on shore.

"I consider that during the war it is much safer for the country, and that officers can be much more easily identified, if they are wearing the uniform of a particular well-known company, by police, detectives and others on the docks all over Great Britain and in foreign ports than can be an officer wearing simply the standard uniform, which can obviously be easily obtained and worn by anybody without being as particularly marked. (I refer to spies and other people during the war and to other parties who are not entitled to wear the uniform during peace.)

"While I consider that it may be possible to adapt the standard uniform to tramp steamers (many of whom carry in peace times, and possibly now, foreign officers, who, provided they hold a Board of Trade certificate, I understand can wear this imperial standard uniform), I feel certain that in the bigger companies, and especially those big liner companies having ships carrying some thousands of passengers on a voyage, it is absolutely essential for the maintenance of discipline and other desirable purposes that the owner's badge and uniform should be worn.

"It is necessary that the different officers—such as the mail officer, baggage officer, the staff captain or the extra chief officer, and so forth, may be known and may be properly distinguished on board their ships and at the piers on embarkation and debarkation. I do not consider that this can be properly carried out by the adoption on these vessels of a standard uniform.

"From inquiries I have made in many directions I am satisfied that the great majority of officers and a large majority of engineers in our various services prefer the old companies' uniforms to the standard uniform. This appears to be the unanimous opinion of the chief marine superintendents and chief superintendent engineers of the Liverpool liner companies, who were called in meeting recently, and who further considered that it is impossible to carry out these heavy changes in uniform during the war."

There are two appendices published. The first prescribes the uniform for officers. The second, embodying the supplementary report, details the standard uniform for petty officers, and concludes with the observation that "in liners it is customary for deckhands to wear a blue jersey, blue cloth trousers and ordinary bluejacket's cap (with name of ship on the cap band); and similarly with the firemen and stokers; it is desirable that this practice should be extended throughout the mercantile marine."

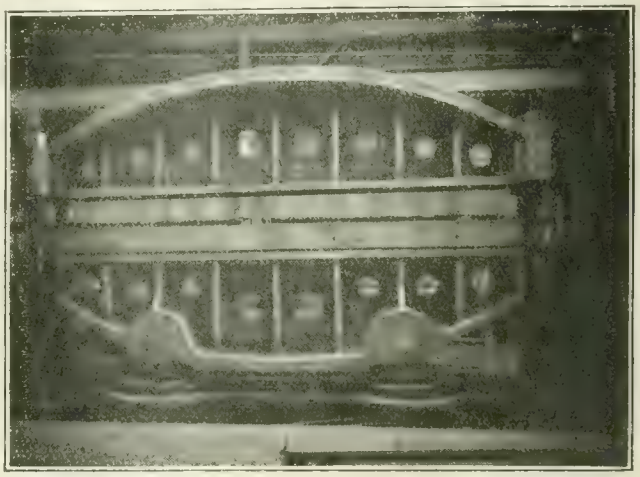
We reproduce illustrations of the principal badges of rank. The chevrons are of plain gold lace or black mohair. Engineers have a purple insertion, ship surgeons a scarlet insertion, and pursers a white insertion.

Syndication of German Owners?—There is a movement on foot to establish a cargo tonnage distribution company (Frachtraumverteilungs Gesell.) in Hamburg, consisting of a compulsory syndication of all German owners possessing merchant vessels larger than 500 tons gross register. *Hamburger Nachrichten* asserts that owners are by no means unanimously in favour of this scheme, and goes on to remark cynically that the results achieved by State socialism during the war "in militarily-organised Germany" do not inspire much optimism concerning the possibilities of the socialistic organisations as regards international shipping problems.

SHIPYARD APPLIANCES.

LARGE SHIP-PLATE BENDING PRESS.

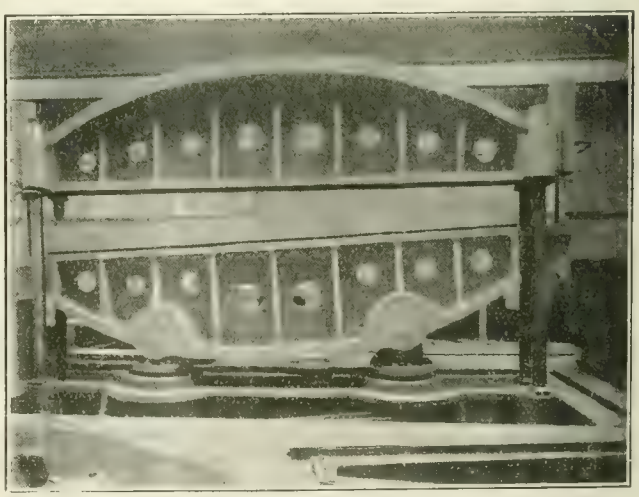
The ship-plate bending press illustrated below is a large and powerful machine capable of taking a plate 16 ft. long and of exerting a pressure of 500 tons. The press, which is manufactured by Hollings & Guest, Ltd., Birmingham, has two rams for raising and bending the plates and two rams working downwards at the end of the table for giving the return to the bottom table; these can be plainly seen from the illustrations.



General View of 500-ton Plate-Bending Press.

An interesting innovation has been introduced in the design of this machine, since it is able to bend a plate from an angle up at one end, leaving it flat at the other, as the rams can work independently of one another.

The ram on the one side has a slightly elongated hole through which the pivot pin passes—allowing a slight horizontal movement when



View Showing One End Rising Independently of the Other.

one end of the table rises up, through the water being applied to the ram, and the other end of the table remaining low down. The head of the table can be raised or lowered to suit different dies. The bottom bending die is shown in position on the top of the table, but the top bending die is not shown in the illustrations.

The manufacturers have built many bending presses similar to these to bend a perfectly straight angle, but this is the first one, so far as they are aware, that has been made which allows the one end of the table of the press to rise up without the other.

The second photograph shows the bottom table tilted so as to bend a plate up to an angle at one end, leaving it flat at the other.

GENERAL NEWS SECTION.

PERSONAL.

An official announcement states that Capt. L. Norrgren has been appointed Consul for Finland in London.

Mr. J. C. Gould, shipowner, Cardiff, has contributed £1,000 towards the Church of England Waifs and Strays Home.

Mr. Wm. Seidler, of Newport, Mon., for many years with Tellefsen and Company, shipowners, Cardiff, who died on March 6 last, left estate of the gross value of £1,588.

Captain John Taylor has been elected Deputy-Master of the Newcastle Trinity House, filling the vacancy caused by Captain Sergent having accepted an important position under the Admiralty.

Captain and Mrs. Robert Ropner have been presented by the officials and staff of Ropner & Sons, Ltd., shipbuilders, Stockton-on-Tees, with a solid silver tray as a wedding gift, with a suitable inscription.

The Military Cross has been awarded to Lieutenant Stephen T. S. Clarke, Grenadier Guards, son of Mr. Trevisa Clarke, managing director of the North of Ireland Shipbuilding Company, Londonderry, for conspicuous gallantry and devotion to duty.

A Reuter message from New York states that Sir Connop Guthrie has been appointed special representative in America of the British Ministry of Shipping, and Mr. T. Ashley Sparks, a director of the Cunard Line, has been appointed to succeed Sir Connop Guthrie, Director of Shipping.

Captain W. Healy Graham, R.E., of Barry, has been awarded the Military Cross. Previous to taking up active service he was manager of the Junction Dry Dock and Engineering Company, Cardiff, and of the Tubal Cain Engineering Works, Cardiff. Captain Graham is a director of both companies.

Mr. Robert Woodliffe Simpson, late of the firm of Metcalfe, Simpson & Co., shipowners, West Hartlepool, who left estate valued at £109,342 gross, bequeathed £200 each to John Groom's Crippleage and Flower Girls' Mission, Dr. Barnardo's Homes, and the Port of Hull Society Sailors' Orphan Home, and his shares in the Masonic Public Hall, West Hartlepool, to the Stanton Lodge of Freemasons.

The Duke of Northumberland, K.G., who died suddenly at Alnwick Castle and was interred at Lesbury on Saturday last, took a keen interest in shipping industry. For five years he was president of the North of England Steamship Owners' Association, a position which in later years has been filled by his heir, Earl Percy, now the new Duke of Northumberland. A telegram of condolence was sent by the Council of the Association to Earl Percy.

Commander F. M. Sargeant, Secretary of the Liverpool Local Marine Board, has presented a gold medal awarded by the President of the United States to Arthur Mahon, formerly a seaman on the steamship *Sagamore*, of Liverpool, in recognition of his services in assisting to rescue the shipwrecked crew of the American barque *Alex Anderson*, which was abandoned in the North Atlantic in October, 1916.

Mr. R. Burton Chadwick was on Thursday last elected a member of the Mersey Docks and Harbour Board in the room of Mr. J. E. Anderson, resigned. He is the nominee of the Liverpool Steamship Owners' Association, and is senior partner in the firm of Joseph Chadwick & Sons, shipowners. He has been chairman of the Liverpool Freight and Demurrage Association, and chairman of the Liverpool Shipowners' Association. He is at the present time on Lord Mersey's Arbitration Panel in connection with the requisitioning of ships by the Admiralty. Mr. Burton Chadwick holds an extra master's certificate, and gained a medal with three bars for service in the Boer War.

At a recent meeting of the Council of the Mercantile Marine Service Association the following appointments were made by election :— Capt. T. M. Whitehead, president of the Association, in the vacancy created by the death of the late Commander A. Houghton, R.N.R. ; Capt. J. H. Goodwin (late Alfred Holt & Co.), vice-president ; Capt. Charles H. Holttum, deputy vice-president ; Capt. J. C. Brokenshar and Capt. William Kydd to vacancies on the finance committee, and Capt. Kydd also to a vacancy on the committee which administers the benevolent funds of the association ; Capt. W. J. Rout, Capt. H. G. Harrison, and Capt. G. C. M. Oakley to the committee of the Liverpool Homes for Aged Mariners, and Commander L. R. Peel, R.N.R., to the committee of the "Andrew Gibson" Widows' Home.

PORT NOTES.

Ostia.—According to the Rome correspondent of the *Morning Post* a contract has been signed permitting the Roman Municipality to construct a harbour at Ostia. Thus, Rome will have, as in ancient times, a seaport at the mouth of the Tiber instead of the distant port of Civita Vecchia. The cost of the undertaking is estimated at 47,000,000 lire (£1,880,000).

Chefoo.—A Reuter message from Peking states that the Chinese Government has agreed to the appropriation of 111,400 taels (approximately £16,700) monthly of the Customs revenue, during 19 months, for the construction of a breakwater at Chefoo, thus ensuring that Chefoo, where British interests are predominant, will remain one of the principal ports of the North China coast, despite the competition of Tsingtau.

Chemulpo.—A report from H.M. Consul-General at Seoul states that, with regard to the harbour construction at Chemulpo, undertaken by the Government Engineering Bureau a few years ago, the local press states that an official concerned has reported that the work has been steadily progressing. The reclamation of the sea front and the construction of locks are all but completed, and the utmost efforts are being put forth for constructing roads. The work is expected to be finished before next September. The construction of railway tracks, as well as the building of warehouses, on the reclaimed ground will also be completed by that time. This means that steamers will be able to berth at the docks about the middle of October. An embankment extending between the port and Wolmi Island is expected to be completed in about three years. The total expenditure by the Bureau on the work this year is estimated at about 700,000 yen.

Milan.—The initial formalities, according to the *Corriere della Sera*, have been completed for the formation of a corporation, including local and Government representatives, for the construction and working of the new port of Milan. Engineers are now engaged on the plans. The commercial port will occupy a large area between the Gamboloita and Rogeredo, and will include four large docks, but only one will be constructed for the present. The scheme includes a considerable canal system connecting with the rivers Adda and Po. The industrial and commercial sections of the port will be plentifully served with tramways and light railways. Running expenses and capital expenses will be met by dock, warehouse, &c., dues. The capital expenditure is estimated at 45,000,000 lire, of which two-fifths will be received from the State. 2,500,000 tons is the annual traffic expected to begin with, or about a third of that of Genoa in normal times. Dredge, &c., work is already being done at various points. Extensions of the original project, such as connections with Lakes Maggiore and Como, are already being considered.

FROM OUR CORRESPONDENTS.

CLYDE DISTRICT.

(From Our Own Correspondent.)

Coal Supply and Industry.—The production of coal in the West of Scotland has fallen off to such an extent recently that steps are now being taken to secure adequate supplies for such important industries as shipbuilding, steel making, and munition making in general. This will be done by a priority rationing scheme, the arrangements for which have been completed, and it is understood that the scheme will be put into operation shortly. In connection with this matter the Controller of Coal Mines visited Glasgow last week and held conferences with representatives of the colliery owners and the workmen. On both parties he urged the necessity for a greater output from the coal mines, and said that under the priority rationing scheme certain classes of consumers might be considerably affected within the arrangements proposed. Anything that the coalowners' and miners' representatives could do, therefore, to increase production would prove of great assistance in the national interest.

General Smuts and Shipyard Workers.—Some good advice was given by General Smuts, during his tour of Clyde shipyards last week, to large numbers of workmen, whom he addressed at nearly all the yards he visited. Speaking to several thousands of men at John Brown & Co.'s yard, Clydebank, he said he knew that workmen had done much in the past four years, but before they saw an end of this business they would have to work still harder and do still more. Of all things in the world the most dangerous was tiredness. If they were men and women they would see this business through and never get tired. If they wished an object lesson of tiredness and weariness they had that lesson in Russia, which was probably the most awful example which the history of the world had produced. The workers of this country wished to conserve what they worked for, and he counselled them not to get tired. Ships were as essential to victory as the holding of the trenches. Let them build ships, and when the enemy was beaten, let them resume energetically the discussion of their home grievances. But let them first beat the enemy.

Position of Private Navigation Schools.—Reference was made in these columns some time ago to the movement which is on foot urging on the Board of Trade the advisability of accepting a period of not more than twelve weeks spent in a navigation school, recognised by the Board as equivalent to the same period of sea service. This movement has the support of the Glasgow Chamber of Commerce, but it has been brought to the notice of the Chamber that unless steps are taken to safeguard the position of private navigation schools, as distinguished from navigation schools connected with technical or other colleges, a grave injustice may be done to a number of very useful institutions. It is estimated that in Glasgow about 80 per cent. of the officers studying for examinations connected with the Mercantile Marine attend three well-known private schools. Prominent shipowners hold that these schools serve a very useful purpose, and to exclude them from any concession granted to the navigation section of technical colleges would not be to the interests of the shipping industry generally. The Glasgow Chamber of Commerce therefore urge that approved private schools, as well as technical colleges, should be included in any scheme whereby a period spent in a navigation school may be recognised as equivalent to the same period of sea service for the purpose of qualifying for the certificate of competency as second mate.

Future of Ayr Harbour.—At a special general meeting of the proprietors of the Glasgow & South-Western Railway held last week the Provisional Order providing for the transfer to the railway company of the Ayr Harbour undertaking from Ayr Harbour Trustees was unanimously approved. As the Glasgow & South Western Company have a monopoly of the railway traffic in and around Ayr they are naturally deeply concerned in the future development of the port. A good deal of capital is required to bring the harbour into line with modern requirements, and it is believed that the necessary capital can be more easily and advantageously raised by the company than by the Harbour Trustees. Sir James Bell, Bart., who presided at the special meeting of the company last week dealt with this aspect of the question. The trustees were anxious, he said, that the company should agree to develop the harbour and give all proper facilities and encouragement to existing and future traffic needs. The railway company undertook to do so, as that was not only their intention and desire, but was a matter very distinctly for their own interest in the future. It would greatly tend to the prosperity of the port and district of Ayr if the harbour were improved, and to the railway company such improvement was of the first importance. The company had agreed that after statutory authority had been obtained for vesting the undertaking in the company, and not later than ten years after the termination of the war, to expend on the equipment and improvement of the harbour a sum of not less than £50,000, and provision was made with regard to that matter.

SCOTTISH EAST COAST DISTRICT.

(From Our Own Correspondent.)

Fraserburgh Harbour Trade.—Traffic at Fraserburgh harbour has been well maintained since the beginning of the year. The financial report of the Harbour Trustees for April shows that the revenue was £379, as against £282 in the corresponding month of last year. The expenditure for the month was £444, and for the past six months it was £5,766.

Buckie Harbour Rates.—Representations have been made to the Board of Trade by Buckie Town Council, which is also the harbour authority of the port, asking for permission to impose increased duties on fish, and in the application the case of Fraserburgh was instanced in which the necessary permission has been granted. The Board of Trade, however, in reply, pointed out that Fraserburgh's harbour is managed by Commissioners who have no authority to impose rates on the ratepayers while Buckie's harbour is managed by the rating authority, and that there is therefore no parallel between the two cases. In the circumstances the necessary authority to increase the import duties was withheld meantime. The Town Council took the view that this was imposing an unnecessarily heavy burden on the ratepayers of Buckie and it was decided to make renewed representations to the Board of Trade on the subject.

Proposed Shipyard for Bo'ness.—Developments in the shipbuilding industry since the war broke out have been considerably greater on the east coast of Scotland than on the west, so far, at least, as the number of new yards established are concerned. On the Firth of Forth new yards are being laid out at Burntisland and Kinghorn on the northern shore, and now it is reported that inquiries are being made with a view to securing a site for a similar purpose at Bo'ness on the southern shore. At a meeting of Bo'ness Town Council last week a letter was read from a London company asking whether suitable ground is available at Bo'ness for the establishment of a yard for the building of a modern class of ship. The members of the Council were unanimous in their opinion that there is plenty of good ground for the purpose, and they decided to invite the co-operation of landed proprietors in the district in furnishing the particulars desired. At present Bo'ness does not possess a shipyard, but the industries existing in the town include shipbreaking, engineering, boilermaking, and also sawmills, iron foundries, chemical factories and other works. The shipping facilities consist of a tidal harbour and wet dock, with large timber basin entered from the dock, covering in all an area of 14¼ acres. The total length of the quayage in the dock is 2,150 ft. and in the harbour 1,825 ft., the latter being suitable for shipping lying aground. The dock and harbour are primarily suitable for import and export, and are provided with hydraulic power plants, including 16 modern hydraulic cranes and three large modern hydraulic coal hoists. The development of Bo'ness, it is believed, must lie in the reclamation of its foreshores where large tracts of mudflats can be reclaimed and excellent sites obtained for works such as shipyards, steel works and kindred industries.

NORTH-EAST COAST DISTRICT.

(From Our Own Correspondent.)

Boilermakers' District Delegates.—There has been a considerable accession of members to the Boilermakers' Society in the past few years, and this has led to the recommendation that seven additional district delegates should be appointed. The branches are voting upon the proposal at the May meetings, and if it is carried the new officials will be allocated to the following districts respectively: Tees and Hartlepool district; Tyne and Wear;

Yorkshire, including parts of Notts, Derby and Lincolnshire; Preston to Carlisle, with Barrow as a centre; Mersey district; East Coast of Scotland and the Clyde and Lanarkshire.

American Labour Delegation.—Tyneside has its handful of pacifists like most other big labour centres, but they are as nothing compared with the overwhelming majority who desire to see a victorious end to the war. Mr. James P. Wilson, Chairman of the American Labour Delegation, visited Newcastle in the past week and had an enthusiastic reception at a crowded public meeting which he addressed on the war aims of the Allies. He received first-hand testimony of the feeling among the local workers, and he, on his part, gave a most encouraging account of the part America is playing towards the ultimate triumph. In America, he assured his audience, they were building ships as fast as possible, and so helping the Allies to overcome the submarine menace. When the war began they had only six shipbuilding yards on the Atlantic Coast, whereas now they were building ships in 26 States with 300,000 men.

Tyne Improvement Commission.—Mr. Arthur Scholefield, who has done valued work on the Tyne Improvement Commission, as Chairman of the Finance Committee, has been chosen as Chairman of the Board in succession to the late Sir William Stephenson The new Chairman is a shipowner, and is head of the firm of Henry Scholefield & Son, Newcastle. He is an able man, and takes the keenest interest in everything that pertains to the River Authority and to the development of the trade and commerce of the Tyne. Mr. Scholefield is an inspiring factor on the Commission, as was shown once again in the few remarks he made in returning thanks for the honour done him. He urged the importance of the Commission being fully alive to the industrial activities which would come after the war, and spoke of the necessity of developing trade in the higher reaches of the Tyne, and of trying to attract more liners to the port.

Preventing Disputes and Helping Production.—On Thursday and Friday last the Federation of Engineering and Shipbuilding Trades held its annual meeting at Sunderland, and the occasion was marked by a civic welcome to the delegates, and by speeches which augured well for continued good relationships between the employers and the men. The Wear has a very creditable record for steady production in shipbuilding, but the Chairman, Mr. W. H. Dugdale, of the local Employers' Association, expressed the opinion that the output could be increased, and hoped that it would be so as an outcome of the new machinery for settling differences. Mr. John Hill, General Secretary of the Boilermakers' Society, described the new agreement for preventing disputes and helping on production as the most comprehensive agreement ever made for the settlement of questions as they arose. It provided the most expeditious machinery yet devised for the object in view, and the functions of the committees were far in excess of anything contemplated.

THE MERSEY DISTRICT.

(FROM OUR OWN CORRESPONDENT.)

Strike at Garston Shipyard.—A strike which took place at H. & C. Grayson's Garston Shipbuilding Yard, and caused a stoppage of about 1,300 to 1,400 men, has been temporarily settled. The dispute arose over the employment of a non-union man, and the resumption of work has been on the understanding that this man shall be dispensed with within 21 days.

Mersey Dock Rates.—The further increase in the dock, harbour and wharf rates and the rates on goods at the port of Liverpool, which were recorded last week, were authorised by the Mersey Dock Board on Thursday last, to become operative on Monday this week. Mr. Danson, the Chairman of the Finance Committee, informed the Board that this was the third increase since the war. Before the outbreak the scheduled rates were plus 10 per cent. The first increase was in January, 1917, when they made the scheduled rates plus 25. The second was in November last, when they made them plus 50 per cent., and now the plus was carried to 75 per cent., which made the present charges 59 per cent. more than the pre-war rates. This, he said, was deplorable, but it was not worse than in other places. The Port of London, for instance, had announced their increase to be 65 per cent. The necessity for the increase was, he told the Board, due to the enormous increase in the price of materials, the increased interest the Board had to pay on borrowed capital, but more particularly to the enormous increase in wages, which had jumped up in consequence of the Order of the Ministry of Munitions with regard to the 12½ per cent. bonus.

SOUTH WALES DISTRICT.

(FROM OUR OWN CORRESPONDENT.)

Board of Trade Examinations.—At a meeting of the Swansea Borough Council the question of holding Board of Trade examinations for marine engineers at the port was mentioned At present, candidates have to go from Swansea to Cardiff for examination, and this, it was contended, was not consistent with the status of a port like Swansea. It was decided to send a deputation to the Board of Trade urging that examinations should be held at the port, also that the principal of the Technical College should draw up a syllabus for classes for the engineering examination.

Industrial Reconstruction.—Mr. Wm. Sutherland (Tredegar Dry Dock, Newport), President of the Shipbuilding, Engineering and Steel Staffs' Association (Bristol Channel Centre), dealing with the proposals of the report of the Whitley Committee upon industrial reconstruction, said they would not only promote the smoother working of the industry, but promised to substitute a human relationship between the various sections concerned for the purely economic one hitherto existent. The Ministry of Reconstruction had, he said, in response to an application, placed the Commercial Staffs' Association upon the list of bodies to be represented when the Industrial Councils were set up.

Wages of Swansea Harbour Trust Employees.—An application made by hydraulic charge-enginemen, firemen, cleaners and others, to the Swansea Harbour Trust, for an alteration in their conditions of employment was before the Committee on Production on Friday. The men asked for an all-round increase of wages as well as a bonus of 12½ per cent. It was submitted on behalf of the Trust that they could not accede to the application because of its financial status. It would also prejudice their position with other South Wales ports. An application was made for the 12½ per cent. under the Munitions Act, by the engineers and men employed on the dredgers and steam tugs. The Committee reserved their decision in both cases.

Recent Wage Awards.—The following is the text of an award issued by the Committee on Production in regard to a claim made by the Iron, Steel and Metal Dressers, Cardiff:—(1) The parties to this reference are: (*a*) the Engineers and Shipbuilders Employers' Association and the Cardiff and District Ironfounders' Association; and (*b*) the Iron, Steel and Metal Dressers' Trade Society. (2) The claim submitted was for a special advance in wages of 10s. per week, to bring the wages of the Union's members into line with those paid in other ship-repairing trades. (3) The matter was referred by the Ministry of Labour to the Committee on Production for decision, and representatives of the parties were heard on March 22, 1918. (4) The men concerned have received the war wage advances settled by the general awards of the Committee for the engineering and foundry trades. (5) The Committee are of opinion, and they so award, that the claim of the Union is not one that can now be conceded.

Employment for ex-Army Officers.—A representative meeting of Cardiff docksmen was held at the Conference Hall of the Chamber of Commerce, when Lord St. Davids delivered an address with a view to enlisting support for the Ex-Officers' Employment Bureau. The establishment of a bureau of employers, companies, and big firms is what is proposed. One feature of the scheme is that a body will be set up to examine applicants for posts. As an illustration of this, Lord St. Davids said that if they wanted men at Cardiff to deal with shipping it was no good sending down 500 names, but by means of a preliminary examination they would find out the capabilities of those who desired posts. Everybody who would want an occupation would have to run the gauntlet of an examination by an experienced business man. In shipping the applicant would be seen by a capable man, conversant with the business, and the same would apply to other branches of trade. Sir Wm. Seager, on behalf of shipowners at Cardiff, gave an assurance that help would be forthcoming to make the scheme a success. A resolution was carried pledging the members to join the Bureau.

BELFAST DISTRICT.

(FROM OUR OWN CORRESPONDENT.)

Harbour Notes.—The harbour rates of Belfast have been further increased, and at the same time the cranage rates have been advanced 5 per cent. The increase is ½d. per ton on cross-channel and coast-

wise vessels and 3d. per ton on foreign vessels, and in the case of rates on goods, these have been put up to the statutory maxima. This is, however, a comparatively small matter, as most of the rates on goods were brought up to the maxima on the schedules which came into operation on January 1. The tonnage which entered the port in 1917 was no less than 700,000 tons below that of 1913, and the tonnage for the first three months of this year shows a still further proportionate decrease. A similar state of affairs exists with regard to goods: the total imports and exports for 1917 showing a decrease of 120,000 tons on the last pre-war year. These facts, coupled with the increased cost of material and increased wages, are responsible for the changes. The Commissioners, however, think that they will not be obliged to approach the Board of Trade for authority to make increases beyond the maxima, but if affairs do not improve they will be compelled to do so.

Shipbuilding and Shipping.—The past few weeks has been a period of great activity in the Belfast yards. A considerable amount of new tonnage has been delivered, and there is no scarcity of work coming forward. Extension is in the air everywhere, both Harland & Wolff and Workman, Clark & Co. having large schemes on hand. The former's new yard in Musgrave Channel is now assuming shape, and it will not be many months before the first keels are laid thereon. The vessels will be launched into the Musgrave Channel, into which a ship has never yet been sent afloat, and on the south bank of which there are hundreds of acres of reclaimed soil. New shops are also about to be erected, and Harland & Wolff are also extending their head offices on Queen's Road by taking in part of the existing spar shed, which will be demolished to make way for a continuation of the handsome suite of offices which are so well known to shipbuilders. The work of the port is more and more centring round the construction of standard ships, and in the course of time it is probable that, apart from repair work, the entire output of the local firms will be devoted to this class of work. Harland & Wolff are also extensively engaged in other operations in the vicinity of Belfast.

THE FREIGHT MARKETS.

(From Our Own Correspondents.)

London.—There has been no change in chartering conditions on the Baltic Exchange. Rates are firmly held and there is much competition for available tonnage. From the River Plate homeward 225s. is the basis rate and to France 250s., while to the United States $20 can be obtained on net form of charter. From the ports of the North American Atlantic seaboard 220s. is obtainable on net form of charter to this country, 240s. to France, and 360s. to Italy. For Gulf loading an additional 30s. is obtainable. For grain 50s. is offered to the United Kingdom, 57s. 6d. to France, 75s. to Marseilles, and 77s. 6d. to Italy. Coal cargoes to the River Plate from Virginia are worth 80s. The strength of the Eastern section of the market shows no signs of diminishing. From Karachi 250s. can be had on scale basis to this country, and from Bombay 275s. to the same destination or 400s. to the Mediterranean. Kernel cargoes are worth 550s. from the Madras coast to Marseilles. The rice ports of Saigon and Burmah offer 500s. to the United Kingdom or France. There is no alteration in rates from the Mediterranean ore and phosphate ports. Huelva would pay 45s. to the Mersey and 60s. to the East Coast United Kingdom for pyrites; Bougie to the Clyde would come at 50s. and Tunis to the same destination 65s., while Bilbao to Boulogne offers 50s. For salt cargoes from Torrevieja to Chittagong 90s. could be had. Bay rates are unchanged at 17s. Bordeaux and 20s. Bayonne to Bristol Channel.

Glasgow.—There is practically no change to record in the condition of affairs on the Glasgow market. Apart from the effect which the holidays have had on chartering, the tone has been very quiet owing to the restriction of business caused by the official control of tonnage, as, while orders are quoted and rates indicated, chartering is only possible when boats are directed. Among the fixtures reported were:—New York to River Plate about 78s., net charter; Virginia to Havana, about 30s., coal, prompt; steamer fixed on time charter, States and West Indies, 35s., one round trip; and ship chartered, Baltimore to Rio de Janeiro, about 8s. 6d.

Newcastle-upon-Tyne.—Collieries are at present working under extreme pressure for supplies on Government, Allied and inland accounts and simply cannot keep pace with business offered. Even the brief "breather" of one day at Whitsuntide will probably prove to have constituted a serious embarrassment to those pits which are behindhand with their output despite maximum efforts to maintain the production. Requisitioned tonnage has never been in better supply than during the last few weeks ever since the war commenced, and neutral customers for fuel are being fobbed off with very small and very occasional odd lots. Indeed, their custom is not being encouraged at present, as is shown by the way in which coal prices have been raised against them. Still they come; as, however, they thoughtlessly neglect, in most instances, to provide their own shipping facilities, the unpleasant duty of refusing to accommodate them is rendered less difficult. Only from Scandinavia is neutral tonnage coming forward in any quantity, and only for Scandinavia, therefore, are fixtures being made to any extent. Indeed, of the six fixtures which constitute the week's chartering list, five are from Swedish ports, and the sixth is from London. The latter is, of course, at the scheduled rate of 17s. Of the former, Gefle has been done at 193 kr., as against 195 kr. last week; Gothenburg, at 168 kr., as against from 157½ kr. to 170 kr.; Stockholm, at from 185 kr. to 190 kr., as against 187 kr.; and Warberg, at 175 kr. For other directions, late rates are very firmly quoted, there being a really big demand although no business is resulting. Thus, Bilbao or Santander is still listed at from 300s. to 310s.; Lisbon at 115s.; Oporto at 125s.; Gibraltar at 100s.; Port Said at 200s.; Huelva at 420s.; and Barcelona at 440s.

Liverpool.—Despite the holidays, there is no falling off in the inquiry for outward coal tonnage, but the response is poor, and business is very limited. Neutral boats could get extreme rates if they were available. Time charter rates keep very firm, but here again it is difficult to find suitable free tonnage, and business in this department is mainly confined to the States—West Indies trade where 35s. is the current rate for one round. In the homeward trades Australia is quoting 130s. to United States, and 110s. to South Africa. North America is quietly steady, with a good inquiry for boats to load again and general cargo to the United Kingdom and Allied countries, on basis of 50s. to United Kingdom. Net charters keep around 210s. from Range ports. Eastern markets are still firm and without tonnage and rates are consequently nominal. Rice ports offer 500s. to 550s. to United Kingdom or France. Indies quiet, and business is confined to controlled ships. River Plate homewards is unchanged at 225s. to United Kingdom and 250s. to France.

Cardiff and Swansea.—Outward coal chartering has been fairly active owing to the better supply of tonnage. The authorities continue to be well supplied in this respect. Business done has been mainly for the limitation destinations. The following fixtures were disclosed: Caen at 46s. 6d. and 48s.; Havre 44s. 9d.; Rouen at 19s. 6d. (*ex* war risks), and at 48s. 9d.; Bordeaux, 69s. All neutral vessels. A fixture concluded in Spain was reported, Bilbao at 300s. A steamer was done at 120s. for Buenos Ayres. On the Swansea market ruling conditions show no change. Business was principally for the French ports. Recent transactions disclosed were: Cork at 17s. 6d. and 19s.; Waterford, 18s. 6d.; several boats were done for Caen at 46s. 6d. and 48s., also for Rouen at 48s. 9d.; Trouville (Neath Abbey loading) was fixed at 48s. 3d.

Hull.—The market is very firm in tone and with tonnage still extremely grave and fuel equally as scarce or more scarce business is seriously adversely affected at the moment. The only real activity is in the North French market where the bulk of the available tonnage is going. There is a short trade passing to West Italian destinations, but tonnage is still scarcer for this trade than for nearer destinations. In the neutral market practically a deadlock exists at the moment.

QUESTIONS IN PARLIAMENT.

Transferred Steamers.

Sir Owen Philipps, on May 13, asked the Secretary to the Treasury whether, in the case of steamers recently owned by a company registered in England and which had now been transferred to a limited company registered in Hong Kong, the British Treasury would lose the income tax and excess profits duty on profits earned by such steamers in the future.

Mr. Baldwin: The Commissioners of Income Tax are precluded from disclosing any information relative to the income tax and excess profits duty assessments upon particular taxpayers. It is impossible to deal with the criteria of liability by way of question and answer, but as to the general scope of these duties I would refer my hon. friend to the provisions of Section 2 of the Income Tax Act of 1853 and Section 39 of the Finance (No. 2) Act, 1915.

United States River Plate Trade.

Mr. Houston, on May 14, asked the Parliamentary Secretary to the Shipping Controller whether the Shipping Controller was aware that practically all British-owned steamers and neutral-owned steamers chartered by British owners, engaged in the United States River Plate trade and *vice versa*, had been withdrawn by the British Government from this trade for purposes of the war, and that American firms, several of them new to the trade, had for some time past been running this service with consequent loss of goodwill and connections to the British owners who instituted and conducted this trade prior to the war; and whether, seeing that the United States were Allies of ours, he would make representations to the United States authorities through the proper channel that there should be equality of sacrifice and service, and that preferential treatment should not be accorded to American owners to the detriment of British owners.

Sir L. C. Money: The facts with regard to the withdrawal of vessels under British control from commercial to war service are as indicated in the question. The principle of equality of sacrifice is the basis of the present arrangements for the co-operative use of tonnage by the Allies. Its application to particular cases is always, of course, a matter of considerable difficulty, and is the subject of constant communications between the Allies.

Mr. Houston: Is the Government aware that since this question was put on the paper another American firm new to the trade has entered this trade?

Sir L. C. Money: Yes, but I venture to suggest that the relative sacrifices of the Allies are constantly changing and cannot be measured properly except as a whole and not in respect to any particular trade.

Mr. Houston: Then how can my hon. friend explain why this trade is being run by American firms while British firms are shut out?

Sir L. C. Money: My hon. friend must be aware of the difficulties of the matter. We do our best to secure co-operation.

Mr. Houston: We have not got it.

Profits of French Shipping Companies.

Mr. Houston, on May 14, asked the Parliamentary Secretary to the Shipping Controller whether the Shipping Controller's attention had been called to the profits made and dividends declared by the French steamship companies, the Compagnie Générale Transatlantique and the Compagnie Havraise Peninsulaire, for the year 1917, showing large increases over the profits and dividends for 1916; whether the steamers of these companies had been trading on owners' account at commercial rates of freight or, if engaged on Government work, had received much higher rates of hire from the French Government than British steamers received from the British Government; and whether British steamers had been lent to France at British Blue Book rates of freight which in many cases showed little or no profit and in some cases actual loss to British owners.

Sir L. C. Money: The facts appear to be as stated by the hon. Member, subject to the qualifications that, as the published balance sheets of British shipping companies show, their position in general, apart from isolated instances, is by no means as bad as is suggested in this question, and that, as to the position of French shipowners, this has been considerably modified by the recent French shipping requisition decree. As to the last part of the question, it is obviously right, and indeed the only practicable course, that the rates of hire paid to British shipowners for requisitioned ships should be the same, whatever the service on which the ships happen to be engaged. The terms on which steamers are made available to the Government of an Ally are an entirely separate matter, depending upon the nature of the obligations mutually operative between the Allied Governments.

Mr. Houston asked whether it was not the case that for some three years at least British ships paid at Blue Book rates had been handed over to France and that French steamers until quite recently had been running at ordinary rates.

Sir L. C. Money asked for notice of the question.

Mr. Holt asked whether the French Government were paying to British shipowners substantially less than they were paying to French shipowners.

Sir L. C. Money: No; that does not necessarily arise from the answer I have given.

Congestion at the Port of Glasgow.

Mr. Houston, on May 14, asked the Parliamentary Secretary to the Shipping Controller whether the Shipping Controller was aware of the congested state of the port of Glasgow; and if he would explain why a certain steamer loaded with cotton and cotton seed was recently sent to Glasgow to discharge, where she would occupy some three weeks in doing so, instead of being sent to Liverpool where she could have been discharged in about one-third of the time.

Sir L. C. Money: It was necessary to send the vessel in question to Glasgow in order to meet the requirements of the Ministry of Food. Apart from that necessity I am assured that the ship can be dealt with there at least as promptly as would have been possible under existing conditions at Liverpool.

Mr. Houston: Can my hon. friend explain how cotton is an article of food, and would it not be better to see that these congested ports are relieved before they are sent there?

Sir L. C. Money: The explanation of the first inquiry is that raw materials are controlled by the Ministry of Food and these materials were required by the crushing mills in the neighbourhood of Glasgow. That is why the ship was sent to Glasgow.

Mr. Houston: Would it not have been better, in view of the great shortage of shipping, if it had been sent to Liverpool where it would have been discharged in about a week instead of being sent to Glasgow where it took three weeks.

Sir L. C. Money: I have made special inquiries on that point, and I am assured by the Director of Shipping that although there may have been a difference it is nothing like what was indicated in my hon. friend's question, whilst the major purpose of getting to Glasgow the material so urgently necessary would not have been carried into effect.

Mr. Pennefather asked whether facilities would be given for the transfer of this cotton from Glasgow, where it was not wanted, to Liverpool where it was wanted.

Sir L. C. Money: I can assure my hon. friend that the material was required at Glasgow, and that is why the ship was sent to Glasgow.

Mr. Houston: Can the hon. gentleman not credit me with having a greater knowledge of the circumstances than the gentleman referred to, seeing it was my own ship.

Sir. L. C. Money: If my hon. friend will acquaint me with any circumstances I have not touched upon in my answer I will be glad to look into it.

Progress in Merchant Shipbuilding.

Mr. Shaw, on behalf of Mr. France, on May 14, asked the Secretary to the Admiralty whether he could give any particulars of the progress of merchant shipbuilding in the different districts and at what stage a ship was reported as completed.

Dr. Macnamara: I am afraid that it is not within the scope of a verbal answer to give my hon. friend the information he asks for, but I shall be pleased to put him in touch with the department of the Controller-General of Merchant Shipbuilding where he can see statements of the progress of merchant ship construction, not only district by district but also yard by yard. With regard to the second part of the question a ship is only reported complete when her machinery trials have been proved satisfactory, when the Board of Trade has granted the usual certificate, and when the vessel herself is ready for loading and bunkering.

Submarine Warfare.

In the course of an answer to Mr. Houston, on May 16, Dr. Macnamara (Secretary to the Admiralty) said: On the whole the general trend of submarine warfare has progressed quite satisfactorily since January 1. The news from neutral countries from time to time published in the Press of this country, and the increased boastfulness and exaggeration of the enemy's published disclaimers, are proof of this, if proof were needed of recent successes. But the Admiralty is averse to taking the results, good or bad, of a short period. My hon. friend has, of course, read recent communications in the Press describing encounters with enemy submarines. We shall continue to sanction the issue of these communications as and when the public interests permit.

Mr. Houston asked the total number of steamers reported to have been unsuccessfully attacked by enemy submarines from January 1 to April 30, 1918.

Dr. Macnamara: The number of British steamers which were attacked by enemy submarines and which escaped undamaged during the period in question was 172. Similar information as to foreign vessels is not available.

Navigation Lights.

Mr. Houston, on May 15, asked the First Lord of the Admiralty whether by Admiralty regulations vessels in convoy were compelled to carry stern lights; whether he was aware that on a recent occasion some 35 French vessels left a French port and navigated

in two columns or lines of ships, each ship in accordance with Admiralty instructions showing stern lights, with the result that the convoy had at night the appearance of a lighted esplanade; and would he explain how he reconciled these Admiralty instructions with his reflections upon British shipmasters and suggestions that they were responsible for exhibiting lights in a manner seeking trouble.

Dr. Macnamara (who replied) said: Dimmed and shaded stern lights are used when circumstances render them necessary. As regards the statement made in the second part of the question, it has not been possible in the time at our disposal to verify these. But it is presumed that the vessels were showing lights ordered, as already stated.

Mr. Houston: Is the right hon. gentleman aware that there is a feeling of dissatisfaction and discontent created in the minds of shipowners owing to the speech of the First Lord on March 5?

Dr. Macnamara: That was in regard to showing lights against orders. This is in regard to lights shown by ships in a convoy. My hon. friend is dealing with another matter.

Replying to a further question, Dr. Macnamara said: The Admiralty are not aware that vessels leaving French ports sometimes receive two different sets of instructions.

Requisition Rates for French Vessels.

Mr. Holt, on May 16, asked the Parliamentary Secretary to the Shipping Controller to state the amount of monthly hire paid by the French and Italian Governments, respectively, to a vessel of their own nationality of 4,800 tons gross register, 12 knots speed, and 7,500 tons d.w. capacity when requisitioned by them.

Sir L. C. Money: As to France it would seem for a vessel of the type, size, and speed referred to, and assuming that the vessel has not changed hands during the war and that the rate of depreciation adopted by the owner is not more than 5 per cent. per annum, the French owner would receive under requisition about 13s. 3d. per gross ton per month, owners paying the whole cost of crews' wages and not merely the pre-war cost, and the French Government taking the marine risk. As to Italy I am not yet in a position to furnish the information asked for.

Control of Mercantile Ports.

Commander Bellairs, on May 16, asked the Secretary of the Admiralty why mercantile ports like Liverpool were under the sole control of naval officers and whether the Royal Naval Reserve officer who used to control the port of Liverpool in peace time was now employed as an examination officer doing routine duties.

Dr. Macnamara: It is not correct to say that mercantile ports such as Liverpool are under the sole control of naval officers. Except in so far as the transport officers are concerned, who are the local representatives of the Shipping Controller and are assisted by shipping experts and commercial shipping agents, the work of the naval officer in the mercantile ports is confined purely to naval duties, including the formation of convoys, in which he is assisted at Liverpool by a committee of shipowners. At certain of the larger ports, including Liverpool, port co-ordination committees have been set up composed of representatives of the following interests: Admiralty, Ministry of Shipping (principal naval transport officer), War Office, port authority, and labour, whose duties are to co-ordinate the naval, military, and civil requirements of the port, utilising its facilities to the best advantage. In the case of Liverpool, the arrangements for berthing the ships very largely remain in the hands of the owners and port authority, under the general superintendence of the Ministry of Shipping. The principle followed is that of leaving the work of the ports in the hands of those who carried it out in peace time, subject to the supervision by the transport staff as will secure the necessary priority for naval and military work. The Royal Naval Reserve officer referred to is combining his office of marine surveyor and water bailiff to the port authority with the general superintendence of the examination service, and no difficulty has been experienced in the proper and efficient performance of his duties in this respect.

Timekeepers of Workman, Clark & Co.

Mr. Anderson, on May 16, asked the Secretary to the Admiralty whether he was aware that Workman, Clark & Co., shipbuilders, of Belfast, a controlled establishment, had drawn up an agreement for the clerks engaged in their counting house and their timekeepers, stipulating as a condition of employment that these employees should not be connected with in any way any organisation of a trade union character; and whether, in view of the provisions of the Munitions of War Act, he would say what action he proposed to take.

Dr. Macnamara: I understand that the firm in question have not drawn up any such agreement for their clerks in the counting-house, but have drawn up one for their timekeepers. The provisions of the Munitions of War Acts, to which my hon. friend refers, are apparently Section 4 (3) of the Act of 1915, Section 12 of the Act of 1916, and Section 9 of the Act of 1917. The effect of these enactments, so far as they bear, if at all, on the point now raised, appears shortly to be this:—

(1) That no workman employed on, or in connection with munition work shall be discharged on the ground that he has joined or is a member of a trade union.

(2) That if any employer discharges a workman on any such ground he shall be guilty of an offence under the original Act.

(3) That the term "workmen" in the original Act includes foremen, clerks, typists, draughtsmen, and other persons whose usual occupation consists wholly or mainly in work other than manual labour.

(4) That any rule, practice, or custom, not having the force of law which tends to restrict production or employment shall be suspended, and if any person is party to an endeavour to comply with such rule, that person is guilty of an offence under the original Act.

The precise bearing of these various enactments upon the agreement drawn up for timekeepers in this case is presumably a matter for the Law Officers, but it appears to me to be so clear that if any timekeeper were refused employment, or discharged from employment, on the ground that he had refused to sign this undertaking, that would be a breach of the law. I give this as a layman's opinion. I have not had time to consult the Law Officers. I ought to add, and this appears to bear upon Section 4 (3) of the original Act, that no person connected with any trade union organisation has ever applied for a situation as timekeeper with this firm, nor has any such person been discharged by the firm on that ground.

Production of Standard Ships.

Colonel Royds, on May 16, asked the Secretary to the Admiralty whether our available inland engineering resources were being utilised to the full extent for production of standard ships' engines, boilers, auxiliary machinery, fittings, frames and plating preparatory to these being sent to shipbuilding yards for assembling.

Dr. Macnamara: Yes, sir; the resources of inland engineering works are being utilised to the fullest extent possible when the capacity of the constructional yards is taken into consideration. So far as ships' engines and boilers are concerned, some 23 engineering firms who had not previously been engaged on marine work are now building marine engines and boilers. All demands for auxiliaries can be met from the former manufacturers without utilising the services of firms who would be new to the work. Fittings, frames, and plating are now being manufactured by constructional engineers and bridge builders in various parts of the country, and when complete will be sent to the shipbuilding yards for assembling.

Mr. France: Is the right hon. gentleman satisfied that there is a sufficient supply of skilled and unskilled labour for carrying out the work in the yards?

Dr. Macnamara: The Civil Lord last week stated the view of the Controller-General of Merchant Shipping, who is satisfied that at the moment all practicable steps are being taken to utilise existing private yard facilities to the full.

Mr. France: And for this purpose?

Dr. Macnamara: I should think so for the time being, but if my hon. friend will put a question on that point, I will obtain an answer.

Bad Time-keeping in Shipyards.

Sir H. Craik, on May 15, asked the Parliamentary Secretary to the Ministry of National Service whether his department was responsible in regard to the cancellation of protection certificates of men employed in the shipyards guilty of bad time-keeping.

Mr. Beck: The withdrawal of certificates in cases of bad time-keeping is governed by paragraph 15 of the Preface to the Schedule of Protected Occupations (M.M. 130), which provides as follows:—

"The national need at the present time does not permit of the retention on Admiralty, War Office or Munitions work of any man of military age, who does not devote his whole time and energies to the work. No man found to have a bad record of absence from work will, therefore, continue to be protected by reason of being employed in an occupation covered by the Schedule. Before, however, a man who holds a scheduled occupation certificate or a war munitions volunteer protection certificate has his protection withdrawn on the ground of bad time-keeping, an opportunity will be given to him of appearing in person before the Main Enlistments Complaints Committee of the division, and the Committee will take into account sickness or other reasonable cause."

My right hon. friend will, therefore, see that the Ministry of National Service cannot withdraw certificates until the Admiralty

or the Ministry of Munitions, as the case may be, notifies the local offices of the Ministry of National Service that the right to retain a certificate has been forfeited under the Schedule.

Sir H. Craik: Can the hon. gentleman give any reasons for the very large number who have been found guilty of bad time-keeping, and yet the small number of these men whose certificates of exemption have been cancelled.

Mr. Beck: I think my right hon. friend representing the Admiralty did give an answer on this point yesterday. I understand that these men have been warned, and I believe the Admiralty are considering further measures in the matter.

COMPANY REPORTS AND DIVIDENDS.

Neue Norddeutsche Flussdampfschiffahrt. Gesell.—A dividend of 4 per cent. is again declared.

Laksevaag Maskin og Jernskibsbyggeri Bergen.—This yard declares a dividend of 25 per cent.

Holland-Amerika Line.—A dividend of only 25 per cent. is declared, compared with 55 per cent. last year.

Koninklijke Nederlandsche Stoomboot Mij.—A dividend of only 10 per cent. is paid, compared with 20 per cent. last year.

Norway-America Line.—Out of a net profit of £305,000 (£362,500 last year), the company again pays 20 per cent. dividend.

Ungarische Seeschiffahrts A.G. Adria.—A dividend of 10 per cent. is declared, the net profit for the past year being £85,800.

Koninklijke Westindische Maildienst Maatschappij.—The dividend for 1917 is 10 per cent., compared with 12 per cent. for 1916.

Deihl Maatschappij.—A final dividend of 25 per cent. is declared, bringing the total dividend up to 50 per cent. (25 per cent.).

Woermann Linie A.G., Hamburg.—This company is publishing no accounts for 1917, and has postponed its general meeting *sine die*.

Deutsche Ostafrika Linie, Hamburg.—The company is issuing no balance sheet and calling no general meeting in respect of last year's working.

Lubeck Wyburger Dampfschiffahrt Gesell.—A dividend of 10 per cent. is declared for 1917. Herr J. Suckau (Lubeck) is re-elected to the supervising council.

Hamburg Kieler Frachtschiffahrt A.G.—A dividend of 8 per cent. on original shares and 5 per cent. on bonds is declared for 1917. Herr H. Kuhne is re-elected to the supervising council.

Ungarische Levante Seeschiffahrt A.G.—A dividend of 5 per cent. is again to be paid from a net profit of £23,500 (£14,700 last year). The company raised its capital last year from £167,000 to £416,000.

Suez Canal Company.—Dividends have been declared for the year 1917 as follows: On capital shares, 77,108 fr. gross, 65 fr. net; usufruct shares, 52·108 fr. gross, 42·63 fr. net; founders' shares, 29·356 fr. gross, 24·794 fr. net.

Dampfschiffahrts Gesell. Argo.—A dividend of 24 per cent. is recommended. For three years past the company has been exempted from publishing accounts. The last "peace dividend" was 12 per cent.

Bruckenbau Flender A.G., Benrath.—The directors propose to pay 20 per cent. for 1917 (on increased share capital) compared with 16 per cent. for 1916. The capital is now to be increased by (nominally) £118,000 to £295,000 (nominal).

Rheinschiffahrts A.G. Fr. Asteroth.—The total receipts for 1917 were £16,800 (£12,600 last year), and from the net profit of £2,830 (£2,390) a dividend of 5 per cent. is paid (4 per cent. last year). The share capital is to be raised from £34,300 to £49,000.

William Simons & Co., Ltd.—The directors recommend, in addition to the dividend on the preference shares at the fixed rate, payment of a dividend of 10 per cent. on the ordinary shares for the year to March 31 last, after making full provision for depreciation. The distribution last year was the same.

Neue Dampfer Company, Stettin.—The company's vessels were engaged all the year and a gross profit of £45,300 (£41,400 last year) was realised, apart from £5,360 from interest and balance brought forward. A dividend of 10 per cent. has again been declared and £9,460 is brought to current account.

Schleppschiffahrt Gesell. Unterweser.—The gross profit for 1917 was £68,400 (compared with £45,400 in 1916). The net profit, including a small balance brought forward, was £36,000 (£15,400). After paying 13 per cent. dividend (10 per cent. last year) a balance of £3,100 has been brought to current account. The entire fleet is fully occupied in the Baltic and on the Weser and the directors anticipate good results this year.

Vereinigte Elbeschiffahrts Gesell., Dresden.—The balance sheet for 1917 shows a loss of £23,100 on the working account, compared with £12,850 loss last year. Allowing £19,900 depreciation £19,400 last year), in addition to £4,200 (£4,100) on the leased property of the Osterreichische Nordwest Dampfschiffahrts Gesell., the total loss for 1917 is £47,300 (£36,500 in 1916), increasing the deficit brought forward from £114,600 to £161,900.

Imperial Direct Line, Ltd.—The directors state that the debentures have all been redeemed and cancelled, and the Company converted into a private one. The usual issue of the report and balance sheet is discontinued. It is explained, however, that the result of last year's working showed a profit of £64,507, of which £20,000 has been placed to reserve, while a dividend of 10 per cent. is declared, and, allowing for the amount brought in, £48,976 is carried forward.

Alcoy & Gandia Railway & Harbour Co., Ltd.—The report for 1917 states that the gross receipts were £25,416, and working expenses, £21,892. Interest and transfer fees amounted to £173; difference on exchange, £580; less interest paid and accrued on prior lien debenture stock, £1,000; Spanish stamp tax, £490; interest on loan from bankers, £683; income tax, £1,226; depreciation, £500; balance brought forward, £2,586; disposable balance, £2,964. The directors have decided not to make any distribution on the first debentures, but to carry forward the above balance to credit of current year. Gross receipts of the railway and harbour show a decrease of £1,470 compared with 1916, and working expenses a decrease of £1,037. In consequence of the restrictions on shipping the harbour receipts were reduced from £11,869 to £5,873. In the current year the receipts up to May 4 amount to 167,400 pesetas, as compared with 194,870 pesetas in the corresponding period of 1917. The harbour receipts show a continued falling off.

Oceanic Steam Navigation Company, Ltd. (White Star Line).—The report for the year ended December 31, 1917, states that the accounts show a profit of £1,534,261 after providing for excess profits duty and adding interest and dividends on investments and transfer fees. To this must be added the balance of £300,636 brought forward from 1916, making the total credit to profit and loss account, £1,834,898. After deducting debenture interest, directors' fees, income tax, and depreciation, and making a transfer of £200,000 to general purposes fund and a donation of £10,000 to the staff superannuation fund, there remains a balance to the credit of profit and loss account of £904,256. Interim dividends amounting to £750,000, equivalent to 20 per cent. on the capital of the company, have been paid, leaving a balance to be carried forward of £154,256. In accordance with the provisions of the trust deed there have been redeemed by purchases and drawings during the year debentures to the value of £133,900, making the total amount redeemed to December 31, 1917, £640,300.

COMPANY REGISTRATIONS.

South Fleetwood Fishing Company, Ltd.—Capital, £1,000, in 500 10 per cent. cumulative preference shares of £1 each, and 10,000 deferred shares of 1s. each. Objects as indicated by the title. Agreement with G. A. F. Spong. The first directors are:—H. J. Hardy, 40, Cambridge Park, Wanstead; A. Reid, 29, Gardon Street, Portgordon, N.B.; E. G. W. Wallis, 54, Wimpole Street, W. (1); C. Jeffs, junr., Willowfield, Clevelys, near Fleetwood; J. E. G. Parritt, 69-70, Mark Lane, E.C. (3). Minimum cash subscription: Seven preference shares. Registered office: 13, St. Helens Place, E.C.

Severn Shipbuilding and Concrete Construction Company, Ltd.—Capital, £100, in £1 shares. Object as indicated by the title. Signatories:—

P. Geddes, 13, Calabria Road, Highbury, N., bookkeeper.
Nellie Evans, 83, Auckland Road, Ilford, Essex, secretary.

The first directors are to be appointed by the subscribers. Qualification, £10. Solicitor: H. Stroud, Cheltenham. Private company.

NEWS PARAGRAPHS.

Ship Launch at Quebec.—One of the six vessels constructed for the Imperial Munitions Board has been launched on the St. Charles River, Quebec. It is the first ship launched at Quebec for half-a-century.

Concrete Vessels for the United States.—The United States Shipping Board has decided upon the immediate construction of 14 concrete tank steamers, totalling 105,000 tons, for the fuel-oil trade, and also four concrete cargo vessels, totalling 12,500 tons.

Tonnage Output in Canada.—From March, 1917, up to the end of March, 1918, shipbuilding yards in Canada were awarded contracts by the Imperial Munitions Board for 46 wooden and 43 steel ships, a record for the twelve months. The value of these contracts is placed at $64,500,000, and the tonnage under contract is 339,000. Four steel ships, with an aggregate tonnage of 13,900, have been completed; four wooden vessels have been launched, and several others are ready to take the water. New yards were opened at Welland, Vancouver, and Toronto during the year, and extensive additions were made to all shipbuilding plants where wooden ships are under construction.

Ogmore Steamship (1899) Company, Ltd.—George Chitham & Co., Cardiff, managers of the Ogmore Steamship (1899) Company, Ltd., have issued circulars convening extraordinary meetings of the shareholders for Friday, May 24, and Thursday, June 20, to consider, and if thought fit, to pass, and at the later meeting confirm resolutions for the vountary winding up of the company, with the appointment of Mr. George Chitham and Mr. William Henry Mayne as liquidators. A further circular explains that the management have acted on the suggestion made at the annual meeting in February last that it was a favourable time for selling the company's steamships, and they had realised on advantageous terms. They anticipated that after meeting all liabilities and providing for compensation to the managers there would be about £50 per £10 share for distribution to the shareholders.

Rapid Ship Construction.—We have received from Mr. William C. Kaelin, of 6, Lloyd's Avenue, London, E.C., the special representative in London of the Skinner & Eddy Shipbuilding Corporation of Seattle, Wash., U.S.A., a copy of a cablegram announcing the launch of a vessel recently completed in the firm's record time. The cablegram is as follows: "Hull No. 21 launched 55 working days, commissioned 67 working days, 79 calendar days. Balance launchings this year will only average 60 days." Since the vessel is of 8,800 tons d.w., to have completed and commissioned the vessel in 67 working days must be considered a very creditable performance. It is worthy of being recalled that the Skinner & Eddy Corporation commenced building their shipyard in the early part of 1916, and that they delivered their first vessel, the s.s. *Niels Nielsen*, of 8,800 tons d.w., during November, 1916, when they had three slipways. At the present time they have five slipways, and are engaged exclusively in building steamers of a similar type for the American Government.

Russian Shipping Nationalisation.—In connection with the nationalisation of the private banks, the question of the transfer to the Treasury of most of the shipping concerns has been definitely decided. A corresponding project prepared at the Smolny Institute declares the necessity of extending nationalisation not only to the steamship share companies, but to other forms of commercial shipping, not directly dependent on the banks. According to the propositions of the Smolny Institute, all the control of Russian shipping may be entrusted to three organisations: the Marine Department, Union of Seamen and River-boatmen, and the Union of Workmen and Boat Servants in the Volga Basin. The matter will be duly submitted to the Pan-Russian Congress of Seamen and River Servants. According to a model scheme existing for the nationalisation of ship property, there are the following points:—All merchant ships, establishments, stores, factories, &c., belonging to share companies are transferred to the possession of the Russian Republic without ransom, according to decree of the local organisation, if they serve as an object of capitalistic exploitation; the commercial debit and credit of shipping concerns passing into the hands of the Treasury will be confided to the State Bank; and the boats will not be confiscated that serve for fishing or catching wild animals.

United States Concrete Steamship "Faith."—It is reported from San Francisco that the concrete steamship *Faith* on her first voyage is to load a cargo of salt and ore at San Francisco for Puget Sound, returning with coal or lumber. This it is thought will be a good test of her seagoing qualities.

Shipyards and Whitsun Holiday.—We are informed that inquiries were made at Middlesbrough shipyards regarding the resumption of work after the Whitsuntide holidays. The men had been given one day, owing to the urgent need for ships, and at one yard employing about 2,400 hands it was ascertained that fewer than 300 presented themselves for work on Tuesday morning. At another yard a few men arrived, but went home again.

Shipbuilding Effort in America.—A Reuter message from Washington states that eight steel ships, totalling 48,150 tons, were completed during the week ended May 11, while 14 vessels, aggregating 57,100 tons, were launched. Seven of the latter were steel ships, with a tonnage of 32,100 tons. It is announced that with the tonnage completed on May 11 the first million tons of shipping delivered to the United States Government under the direction of the Shipping Board has been put on the high seas to help to defeat Germany.

Riveting Contests.—The *New York World* announces the offer of a special prize to the crew in any American shipbuilding yard which makes the best riveting record. Prizes are to be awarded weekly to the crew in the two great shipbuilding districts on the Atlantic coast which drives the greatest number of rivets. The journal's plan follows that of a unique contest which has been started recently between American and British riveting crews. The crews are to be composed of three, four, or five men, according to whatever practice exists in each yard.

P.L.A. and Dock Labourers' Wages.—In consequence of the award recently made by the Committee on Production, granting to dock labourers an additional war advance of 2d. per hour, the Port of London Authority have been compelled to request the Board of Trade to sanction as from May 21 a further increase of 15 per cent. in the dues, rates, and charges on vessels and goods using their dock and warehouse undertakings. This represents an increase of about 65 per cent. over the pre-war tariffs, entirely due to advances in wages and consequential additional expenditure.

Thames Shipyard Sale.—It is reported that Blane & Co., Ltd., of London and Cardiff, have acquired the old-established Thames shipbuilding yard hitherto carried on by A. W. Robertson & Co. The undertaking comprises freehold property and the business as a going concern. The yard was started many years ago by Mr. A. W. Robertson, and has a high reputation for light-draught vessels of a special type. Since the war began, however, the yard has been entirely engaged on Admiralty work. The business will in future be known as the Lea Shipbuilding and Repairing Company, Ltd.

Australian Shipping Risks.—A Reuter message from Melbourne states that a proclamation has been gazetted declaring that the Inter-State shipowners have asked for indemnification by the Federal Government for losses of vessels sailing between Australian ports resulting from acts of war. The Government has declined to accede to this request, but undertakes, in the event of capture, total loss or injury through war operations, to recoup the amounts which the owners are legally compelled to pay under the Seamen's Compensation Act, 1911, and also to refund payments for cargo and luggage lost or damaged, and payments arising from the death or injury of passengers.

FORTHCOMING EVENTS.

Institution of Petroleum Technologists.—Tuesday, May 28, meeting at the Royal Society of Arts, John Street, Adelphi, London, W.C.2, at 8 p.m. Paper on "The Application of Electrical Power to Oilfield Requirements," by Mr. J. Wilfred Burford, M.I.Min.E., A.M.I.E.E.

Institution of Electrical Engineers.—Thursday, May 30, annual meeting at the Institution of Civil Engineers, Great George Street, Westminster, S.W., at 6 p.m.

SHIPPING AND OTHER MEETINGS.

May 29 (*Wed.*)—**Oceanic Steam Navigation Co., Ltd.** (**White Star Line**) (Annual), at Oceanic House, 1a, Cockspur Street, London, S.W., at 3 p.m.

OFFICIAL NOTICES AND SHIPS FOR SALE.

THOS. PINKNEY & SONS

(Thos. Pinkney, S. Renny Pinkney, David R. Pinkney).

SHIPPING AUCTIONEERS.

BROKERS FOR THE SALE AND PURCHASE OF STEAMERS, &c.

LICENSED VALUERS.

VALUATIONS FOR WAR LOSS, PROBATE, SALE, &c.

BALTIC CHAMBERS, SUNDERLAND.

Telegrams: "SPARDECK."

FOR SALE.—Secondhand Vertical Inverted Compound Condensing Steam Engine, 100 I.H.P., £250. Fielding & Platt, Ltd., Gloucester.

DIRECTOR wanted for Ship Repairing Yard, South Coast, with £10,000. Principals only. Box 430, Sell's, Ltd., 168, Fleet Street, E.C.4.

ENGINEERING FIRM with well equipped Machine Shops, now engaged on Munitions, solicits enquiries for all classes of Turning, Drilling, Grinding, Milling, Fitting, &c. Aircraft Fittings, also Copper Pipe work a speciality. Correspondence with a view to Post War Business especially invited. The Lankester Engineering Co., 39, Eden Street, Kingston-on-Thames.

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Wednesday.

All advertisements should be addressed to—
Shipbuilding and Shipping Record,
Queen Anne's Chambers,
Westminster, London, S.W.1.

BACK NUMBERS
OF
SHIPBUILDING & SHIPPING RECORD.

REVISED SCALE OF PRICES.

Back Numbers of "Shipbuilding & Shipping Record," if in print, will be supplied at 6d. within three months of date of publication.

Beyond that period the prices will be as follows:—

	s.	d.
Within 12 months of publication	1	0
From 1 year to 3 years after publication...	2	6

SPECIAL NUMBERS

Shipbuilding and Shipping Progress during 1917, Published January 2, 1918	1	0
,, 1916, Published January 3, 1917	1	0
,, 1915, Published January 5, 1916	1	0

Postage extra in all cases.

Apply to the Publisher,
Shipbuilding & Shipping Record,
Queen Anne's Chambers,
Westminster, London, S.W.1.

"SHIPBUILDING AND SHIPPING RECORD" TABLE OF SHIP SALES.

Name and Type.	Tonnage.	Dimensions. Draught in ( ).	Sold by, to	Builders, hull and year.	Machinery and builders.	Remarks.
Ben Lomond, ss. (single dk.)	2,814 gr. 1,795 net 4,760 d.w.	320′ × 46½′ × 21′ (19′ 10″)	Morrison Shipping Co., Newcastle, to buyers not stated	W. Gray & Co., W. Hartlepool (1906)	23½, 38, 64 × 42 (Cen. Mar. Eng. Works, W. Hartlepool)	Price about £77,500.
Berwen, ss. (spar dk.) (ex *Beethoven*)	3,752 gr. 2,361 net 6,230 d.w.	360½′ × 46′ × 18½′ (23′ 7″)	W. & C. T. Jones, Cardiff, to buyers not stated	Bartram & Sons, Sunderland (1903)	25, 42, 68 × 48 (J. Dickinson & Sons, Sunderland)	Price about £82,500.
Ethyl, ss. (single dk.)	3,082 gr. 1,950 net 5,200 d.w.	331′ × 47½′ × 22½′ (20′ 9″)	Amyl Steam Shipping Co., Hull, to the Letricheux Line, Ltd., Swansea	Ropner & Son, Stockton (1906)	23½, 39, 64 × 42 (Blair & Co., Stockton)	Price about £117,000.
Doric, ss. (single dk.) (ex *Tadousac*)	2,359 gr. 1,452 net	260′ × 43¼′ × 25¼′	Canada S.S. Lines, Toronto, to buyers not stated	Bertram E. Works Co., Toronto (1903)	17, 28, 46 × 32 (Bertram E. Works Co.)	—
Thornhill, ss. (single dk.)	3,848 gr. 2,421 net 6,550 d.w.	355½′ × 51′ × 23¾′ (22′ 1″)	Taylor & Sanderson Steam Shipping Co., Sunderland, to buyers not stated	Short Bros., Sunderland (1911)	25, 41, 67 × 45 (G. Clark, Sunderland)	Price about £200,000.
Wallace, ss. (single dk).	3,930 gr. 2,532 net 6,650 d.w	355½′ × 48½′ × 27¼′ (23′ 9″)	Taylor & Sanderson, Steam Shipping Co., Sunderland, to buyers not stated	Short Bros., Sunderland (1905)	25, 42, 68 × 45 (G. Clark, Sunderland)	
Independencia, ss. (awning dk.)	1,100 gr. 748 net	210′ × 32½′ × 11¾′ (13′ 7″)	Marina Mercante Argentina, Buenos Ayres, to Hermanos Dodero, Monte Video	Smith's Dock Co., N. Shields (1905)	17, 28½, 46 × 30 (MacColl & Pollock, Sunderland)	—
Libertad, ss. (awning dk.)	1,104 gr. 750 net	210′ × 32′ × 11′ (14′ 3″)	Marina Mercante Argentina, Buenos Ayres, to Hermanos Dodero, Monte Video	Smith's Dock Co., N. Shields (1906)	17, 28½, 46 × 30 (MacColl & Pollock, Sunderland)	—
Paso de los Libes, ss. (single dk.) (ex *Sajonia II*)	606 gr. 363 net	197′ × 32½′ × 9′	Marina Mercante Argentina, Buenos Ayres, to Hermanos Dodero, Monte Video	Nordsee Werke, Emden (1905)	10½, 15½, 20¾ × 17¾ (L. Frerichs & Co., Osterholz, Scharmbeck)	—
Paso de Cuevas, ss. (single dk.)	682 gr. 393 net	221½′ × 33¼′ × 10¾′	Marina Mercante Argentina, Buenos Ayres, to Hermanos Dodero, Monte Video	J. I. Thornycroft & Co., Woolston (1909)	11, 18, 29 × 21 (J. I. Thornycroft & Co.)	—
Paso de la Patria, ss. (single dk.)	682 gr. 393 net	221½′ × 33¼′ × 10¾′	Marina Mercante Argentina, Buenos Ayres, to Hermanos Dodero, Monte Video	J. I. Thornycroft & Co. Woolston (1908)	11, 18, 29 × 21 (J. I. Thornycroft & Co.)	—
Paso de Martin Garcia, ss. (single dk.)	703 gr. 414 net	221½′ × 33¼′ × 10¾′	Marina Mercante Argentina, Buenos Ayres, to Hermanos Dodero, Monte Video	J. I. Thornycroft & Co., Woolston (1909)	11, 18, 29 × 21 (J. I. Thornycroft & Co.)	—
Paso de Obligado, ss. (single dk.)	682 gr. 393 net	221½ × 33¼′ × 10¾′	Marina Mercante Argentina, Buenos Ayres, to Hermanos Dodero, Monte Video	J. I. Thornycroft & Co., Woolston (1908)	11, 18, 29 × 21 (J. I. Thornycroft & Co.)	—
Paso de San Lorenzo, ss. (single dk.)	703 gr. 415 net	221½′ × 33¼′ × 10¾′	Marina Mercante Argentina, Buenos Ayres, to Hermanos Dodero, Monte Video	J. I. Thornycroft & Co., Woolston (1909)	11, 18, 29 × 21 (J. I. Thornycroft & Co.)	—
Porvenir, ss. (ex *Jan van Rijswick*)	1,177 gr. 728 net	230½′ × 33¾′ × 14′	Marina Mercante Argentina, Buenos Ayres, to Hermanos Dodero, Monte Video	Rijkee & Co., Rotterdam (1900)	17½, 28, 45 × 36 (Maats. Fyenoord, Rotterdam)	—
Union, ss. (single dk.) (ex *Pearl*)	677 gr. 404 net	185′ × 29½′ × 11½′ (13′ 2″)	Marina Mercante Argentina, Buenos Ayres, to Hermanos Dodero, Monte Video	Wood, Skinner & Co., Newcastle (1898)	16, 26, 43 × 30 (N.E. Mar. Eng. Co., Newcastle)	—

SHIPPING SHARE MARKET.

There has been a fair amount of business in the stock and share markets during the past week, although the general tendency was to restrict dealings in view of the probability of big fighting on the Western front. Prices in shipping shares have been well maintained. Both Royal Mails and Peninsular & Oriental deferred have advanced, the former on the dividend of the Pacific Steam Navigation Company. There have been a number of transactions in the lower-priced shares, including Cunards, whose report is awaited with interest, Court Lines, Cairn Lines, Furness Withys, &c. Clan Lines are steady on the dividend which was up to expectations. There has been a fall in Prince Lines of late, the price of 5½ indicating that the demands of the syndicate which was stated to have been formed some time ago to buy the shares at up to 6 have been satisfied. A feature of recent days' business has been the activity of Tyne-Tees Steam Navigation £1 (10s. paid) shares which have been freely dealt in at rising prices, touching 28s. 6d. The buying is mainly from Newcastle, but there is a well-spread inquiry for the shares from other quarters. Bargains in Nitrate Producers' Steamship shares have been marked during the week at about 25, these being the first transactions since February of last year. The company is expected to show an improvement in profits owing to the general recovery of the nitrate position, and the activity of the nitrate companies, although it may be mentioned that only half the company's fleet is, we believe, engaged in the trade at the present time, the other vessels having been engaged on Admiralty work. The continued improvement in the price of the British Steamship Investment Trust deferred stock may be noted, business having been transacted at 443, which is about 100 points ahead of last year's top figure and nearly four times the pre-war price. In the shipbuilding section there is a steady demand for the better class of shares and price movements have generally been in favour of holders.

SHIPPING, SHIPBUILDING, ENGINEERING AND MARINE INSURANCE SHARE LIST.

SHIPPING.

Name.	Share and paid.	Extreme quotations, 1917.	Last ann. div. % or per share.	Yield. %	Quotation (See Note).	Rise or Fall.
	£					
African S.S.	20	30½—25½	10	6⅜	30	+2
Allan Line ... Deb.	100	—	4	4⅜	92	
Anchor Line ... Cum. pref.	10	9⅛—8¾	5⅛	6¼	8¾	− ⅛
Do. ... Deb.	Stk.	105⅝—102⅜	4⅝	4⅝	102	
Argentine Nav. ... Cum. pref.	1	25/—14/3	6	5¼	22/6	
Do. ... Ord.	1	20/6—6/6	Nil.	Nil.	16/6	−/3
Australasian Un. S. Nav. Deb.	Stk.	80⅜—79⅛	4	5	81	
Belfast Steam ... "A"	10 (5pd.)	—	5	5	5	
British & Argen. Nav. ... Deb.	Stk.	84—80	4½	5⅞	81½	+1
British India Nav. ... Deb.	Stk.	84—82	4½	5⅞	81¾	
British S.S. Invest. Trust Def.	Stk.	460—344¼	50*	11⅛	445	+18
Do. ... Pref.	Stk.	105⅜—104	6	5⅞	103½	+1⅜
Do. ... Deb.	Stk.	74¼—70	4⅜	6⅛	73	+1
Cairn Line ... Bds.	Bds.	94—90	5	5⅜	90½—91	
Do. ... Ord.	1	51/6—40/9	20†	8⅜	47/—	−7/-
Clan Line ... Ord.	10	55½—26½	25	5¼	44	
Court Line ... Ord.	£1	40/6—29/6	10	5⅜	36/-	+1/-
Cunard SS. ... Ord.	1	85/—63/9	20*	5	85/-	
Do. ... Cum. pref.	Stk.	97½—82	5	5⅞	86	
Do. ... Deb.	Stk.	100—93½	4⅜	4⅝	97	
Elder Line ... Deb.	Stk.	95—89	4½	4⅜	103	
Elder Dempster ... Cum. pref.	1	19/—17/-	5⅜	6¼	19/-	
Do. ... Deb.	Stk.	89—85	5	5⅜	83½	
Ellerman Lines ... Pref. Ord.	10	9¾—8⅜	6¼	6¼	9⅜	+ ⅛
Do. ... Guar. pref.	10	9—8¼	4⅜	5⅛	8½	
France Fenwick ... Cum. pref.	5	95/3—85/-	5⅜	6¼	85/-	−2/6
Furness, Withy ... Ord.	1	60/9—41/6	20*	6⅜	63/-	
Do. ... Cum. pref.	10	9—7⅞	5	5⅜	8½	
General Steam Nav. Ord.	1	24/9—21/6	10	7⅜	30/6	
Do. ... Pref.	1	19/4⅜—15/-	5	6¼	15/6	
Houlder Line ... Cum. pref.	5	82/6—75/-	5⅜	6⅜	81/3	+1/6
Do. ... Deb.	Stk.	—	4⅜	4⅜	91	
Houlder Bros. ... Cum. pref.	5	—	5⅜	6⅜	4	
Do. ... Deb.	Stk.	—	4⅜	5⅜	82	
India Gen. Nav. & Rly. ... Ord.	10	11⅜—8¼	6	5⅜	11⅜	
Indo-China N. ... Pref. Ord.	5	97/6—87/6	6	6¾	97/6	
Irrawaddy Flotilla	40	—	12⅜	5	100	
Khedivial Mail ... ... Ord.	1	40/—24/-	20	12¾	36/-	−1/-
Do. ... ... Pref.	5	76/3—70/-	5⅜	7⅜	72/6	
Do. ... ... Deb.	Stk.	95½—93	4⅜	4¾	94¾	
King Line ... ... Ord.	1	42/6—31/6	12	5⅞	42/6	−2/3
Lamport & Holt ... Cum. pref.	£1	20/4⅜—18/-	6	6	19/3	
Leyland (F.) ... Cum. pref.	10	8⅜—7⅛	5	5⅞	8 1/16	
Mercantile SS. ... ... Ord.	5	30⅛—15	40	8	30⅜	
Do. ... ... Pref.	1	21/—15/9	5	6¾	20/-	
Moor Line ... ... Ord.	10	35 - 20	30	6⅜	41	
Nelson Steam Nav. ... Deb.	100	—	5	5⅛	98¾	
New Zealand ... ... Ord.	£10	—	8	2⅜	32½	
Do. ... ... Deb.	Stk.	87⅛—86⅜	4	4⅝	87	−1⅛
Nitrate Producers SS. ... Ord.	5	25⅞ - 20	30	6¼	25⅝	+1⅛
Do. ... Cum. pref.	5	100/—90/-	5	5	5	
Oceanic Steam. Nav. ... Deb.	100	98¾—84	4⅜	4⅜	95	
Orient.Stm.Nav.Co. Cum. pref.	10	9¼—8⅜	5	5¾	9⅛	
Do. ... ... Deb.	100	92—88	4⅜	5⅛	87	−1
P. & O. S. N. ... Cum. pref.	100	93¾—84	5	5⅜	90	−2
Do. ... ... Def.	100	342—295	18	5⅜	334	+4
Do. ... ... Deb.	Stk.	65⅛—63⅛	3⅜	5⅜	63	
Prince Line	1	6⅜—3 7/16	30	5¼	105/-	−12/6
R.M.S.P. ... ... Ord.	100	125—109½	7	5¾	121	+2
Do. ... ... Pref.	Stk.	85⅜—80	5	6	84	
Do. ... ... Deb.	Stk.	86—79	4⅜	5⅜	78⅝	− ⅛
Shaw, Savill & Alb. Cum. pref.	5	87/6—80/-	5½	5¾	85/-	
Shell Transport ... ... Ord.	1	6¼—96/3	35	5¾	6	+ ⅜
Do. ... Cum. pref.	10	9¼—9⅛	5	6¾	8¾	
Sutherland SS. Co.	£1	75/—50/9	30	5¾	1⅛xd	
Tyne-Tees Steam... ... Ord.	£1 (10/- pd.)	—	20	7	28/6	
Union-Castle SS. Cum. pref.	10	7¾—7¼	4⅜	6	7⅛	
Do. ... ... Deb.	Stk.	90—86	4	4⅜	90	+1
West Hartlepool ... ... Pref.	10	7¾—7⅜	5⅜	6⅝	8	+ ⅛

INSURANCE.

Alliance	20 (2·4 pd.)	10¼—9	12/	7	10	
London Assurance ...	25 (12½ pd.)	60⅜—46¾	22	7	64¾	
Merchants' Marine Insurance ...	10 (2½ pd.)	10⅜—6¾	10	6	10⅜	+ ¼
N. British & Mercantile Ord.	25 (6¼ pd.)	36—29	40/-	6⅜	34	
Phœnix Assurance ...	10 (1 pd.)	7⅜—6	40	7	7⅛	
Royal Exchange Assurance ...	Stk.	241⅜—187	10	4½	242xd	
Sea Insurance	10 (2 pd.)	27⅜—24¾	10	6	25¾	−1¼
World Marine, Limited ...	5 (2 pd.)	6⅜—55/-	10	8	7	+ ¼

IRON AND STEEL.

Name.	Share and paid.	Extreme quotations, 1917.	Last ann. div. % or per share.	Yield %	Quotation (See Note).	Rise or Fall.
	£					
Babcock & Wilcox... ... Ord.	1	68/—52/6	15	4½	67/6	+2/6
Baldwins ... Cum. pref.	1	20/—15/-	5⅜	5⅜	20/-	
Do. ... ... Deb.	Stk.	84—82	4⅜	5⅜	84	
Bayliss, Jones ... Cum. pref.	1	—	5	10	10/3	
Bell Bros. ... ... Cum. pref.	10	10—9⅜	6	6	9⅜	− ⅛
Do. ... ... Deb.	Stk.	80—73¾	5	7	74	
Bessemer (Henry) ... Ord.	1	34/6—24/6	12⅜	7⅛	32/-	
Bolckow Vaughan ... Ord.	1	30/—22/2	11	7⅜	28/-	− -/4½
Do. ... ... Cum. pref.	20	17⅛—16¾	5	5⅛	16⅜	
Cargo Fleet Iron ... ... Ord.	1	24/9—17/3	3	2⅜	25/6	
Do. ... ... Deb.	100	84—81½	4⅜	5⅜	83	
Consett Iron Co. ... ... Ord.	1	36/3-24/10½	50	10	97/6	+2/6
Dominion Iron & Steel	Bds.	88⅛—71¾	5	7	73	
Dorman, Long ... ... Ord.	1	50/—30/9	8†	—	36/-	
Do. ... ... Deb.	Stk.	—	4	5⅛	71	
Ebbw Vale Steel & Iron Ord.	1	30/6—24/6	12⅜	9	30/-	
Guest, Keen & Nttefids Ord.	1	89/—62/6	15*	3¾	85/-	+2/6
Do. ... ... Cum. pref.	5	5⅜—5	5	4⅜	5⅜	
Do. ... ... Deb.	Stk.	79¾—73¾	4	5¼	76⅜	
Hadfield's Steel Foundry Ord.	1	107/6—78/6	30	5½	100/6	
Ibbotson Bros.	5 (4 pd.)	7—6¼	7⅜	4¾	6⅜	
Jessop (W.) & Sons ... Ord.	5 (4 pd.)	10—8	15*	6⅜	9¼	
Lanarkshire Steel Cum. pref.	10	—	5	7⅛	7	
Lysaght (J.) ... Cum. pref.	1	25/—20/-	6	6	20/6	
Do. ... ... 2nd pref.	1	19/9—19/4⅜	6	6	19/6	
Manganese Bronze ... Ord.	1	—	6	11	1 1/16	
Do. ... ... Cum. pref.	1	—	6	8	1 1/16	
North-Eastern Steel ... Deb.	Stk.	—	4⅜	—	78⅛	
Palmers Ship & Iron "A" ...	1	13/—9/9	Nil.	Nil.	13/9	
Scott (Walter) ... ... Ord.	1	29/4⅛—21/3	15	10⅜	26/4⅛	
Do. ... ... Pref.	1	19/9—16/-	6	7½	20/6	+ -/9
Sheffield Forge ... ... Ord.	1	—	15	4½	70/-	
Shelton Iron & Steel ... Ord.	1	24/6-16/10⅜	7⅜	6	20/3	
Do ... ... Deb.	100	91⅜—91	5	5⅜	91⅜	
S. Durham Steel & Iron Ord.	1	42/9—29/6	10	4½	43/-	−1/-
Do. ... ... Cum. pref.	1	20/9-18/7⅜	6	6⅜	20/7½	
Do. ... ... Deb.	Stk.	81—80	4⅜	5⅜	80	
Steel Co. of Scotland ... Ord.	10	—	10	6¼	15⅜	
Stewarts & Lloyds Pref. ord.	10	17—16	10	6¼	16	
Do. ... ... Cum. pref.	10	—	6	5⅜	10¾	
Stone (J.) ... ... Cum. pref.	10	8⅜—7¼	5	6¾	7 7/16	
United States Steel ... Ord.	100$	124—109⅜	8	7	103 3/4	
Do. ... ... Cum. pref.	100$	—	7	7	115⅜xd¦	
Vickers Ltd. ... ... Ord.	1	44/6—35/3	12⅜	6	41/9xd	
Do. ... ... Pref.	Stk.	84—81	5	6	83	
Do. ... ... Deb.	Stk.	79 - 74⅜	4	5 3/16	77	
Weardale Steel ... Def. ord.	1	32/3 - 23/-	19⅓	13⅓	29/-	
Do. ... ... Pref. ord.	1	25/3—18/9	6	5¾	25/-	
Do. ... ... Deb.	Stk.	—	4	6⅜	62	
Workington Iron & Steel Ord.	1	30/3—21/-	10	6⅜	28/9	

SHIPBUILDING AND MARINE ENGINEERING.

Armstrong, Whitworth Ord.	1	45/—36/-	12⅜	5¾	41/3	
Do. ... ... Cum. pref.	5	73/9—67/-	4	5½	70/-	+2/6
Do. ... ... Deb.	Stk.	78—73	5	6⅜	75⅜	
Beardmore (W.) ... ... Deb.	100	93—89	4⅜	5	93	
Brown (John) ... ... Ord.	1 (15s. pd.)	29-/—22/9	12½	7	28/-	
Do. ... ... Cum. pref.	10	8⅜—7⅜	5	5¾	8¾	+ ⅛
Cammell Laird ... ... Ord.	5	7⅜—6¾	10	7⅜	6⅜	+ ⅛
Do. ... ... Cum. pref.	5	85/6—74/6	5	6⅜	75/-	
Do. ... ... Deb.	100	83⅜—79⅜	4⅜	5⅜	84	
Dunlop (Jas.) ... ... Ord.	1	28/9—16/-	10	9⅜	21/6	− -/9
Do. ... ... Cum. pref.	1	18/9—16/6	6	7⅜	18/-	+ -/6
Fairfield Shipbldg Cum. pref.	10	8¾—8¼	6	7⅜	8¾	+ ⅛
Fleming & Ferguson ... Ord.	10	—	10	7	14½	
Gray (Wm.) ... ... Deb.	100	100—95⅜	4⅜	4¾	97⅜	
Hawthorn (R. & W.) Leslie Ord.	1	—	12⅜	6¼	38/6	
Henderson (D. & W.) Cum. pref.	1	—	5	9	9 1/16	
Richardsons Westgarth Ord.	1	10/3—5/-	Nil.	Nil.	9/6	
Do. ... ... Cum. pref	1	19/9—12/6	Nil.	Nil.	18/-	
Do. ... ... Deb.	Stk.	67—62	4⅜	6⅞	66	
Simons (W.) ... Cum. pref.	10	—	5	5	9 1/16	
Swan, Hunter & W. R. ... Ord.	1	51/—33/6	12⅜	5⅜	52/3	
Do. ... ... Cum. pref.	1	17/3—17/-	5	5⅜	17/-	−1/6
Do. ... ... Deb.	Stk.	78—77	4⅜	5⅜	77	
Thornycroft (John I.) ... Ord.	1	45/—16/-	17⅜	8¼	38/-xd	
Do. ... ... Cum. pref	1	19/—16/-	6	6⅜	18/6	
Do. ... ... Deb.	100	—	5	5¼	82¾	
Wallsend Slipway ... Ord.	1	2—1⅜	10	2¾	39/6	
Do. ... ... Cum. pref.	1	1—1	5	5	19/-	

* Including bonus. † Also 20 % in shares. ¦ Treasury price.

NOTE.—Owing to the nominal character of business in many shares the quotations in this column do not necessarily represent the actual prices at which business can be transacted, but are intended to indicate the average price at which business has occurred.

Telegrams: "Thomsonian, Sunderland." Codes: ABC, AI, Watkin's, Scott's. Telephone Nos.: 1242, 1243 and 1244.

Joseph L. Thompson & Sons, LTD.

Shipbuilders and Repairers.

High-Class Cargo and Oil-Carrying Vessels.

A Separate Staff for Repairing Work.

Public Graving Docks 441 and 356 ft. long. Own Deep Water Quay 750 ft. long.

North Sands Shipbuilding Yard, and

Manor Quay Repairing Works, - -

SUNDERLAND.

SUTCLIFFE (of Crumpsall) Ltd.
CRUMPSALL MILLS, MANCHESTER.

VULCANISED FIBRE ROLLING MILLS : SHEETS : RODS : AND TUBES
For All Electrical and Mechanical Work.

FIBRE FERRULES FOR CONDENSER TUBES FOR SHIPS
GRAINED SHEETS FOR TRUNK AND ATTACHÉ CASES, Etc.

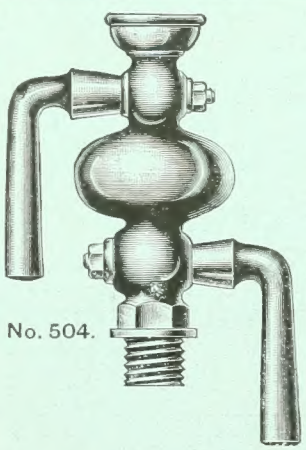
Slabs for Noiseless Wheels, Joint Rings for Water Pipes for Hydraulic and Ship Work, etc., etc.

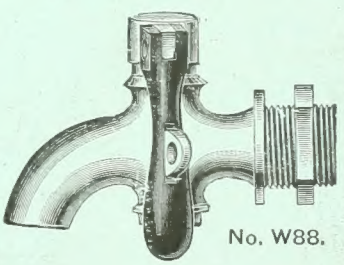
Contractors to H M. Government, Admiralty, War Office, India Office, General Post Office and Principal Railway Companies, &c., &c.

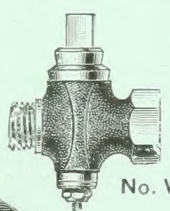
Telegrams: "FLEXIBLE," Manchester. *Telephones:* 751, 752, 321 Cheetham Hill Circuit.

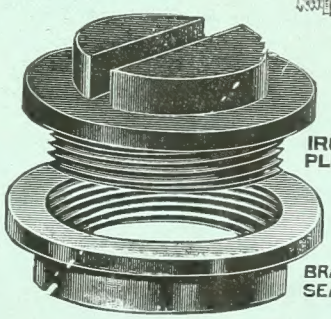
ENGRAVING AND MACHINE DIVIDING
NAME PLATES. INSTRUCTION PLATES FOR SHIPS &c &c
METOGRAPH ENGINEERING Co LTD
280. CATHEDRAL ST
GLASGOW.

Telegrams: "Durability."
Telephone: East 74.


No. 504.


No. W88.


No. W145.



No. 20a.

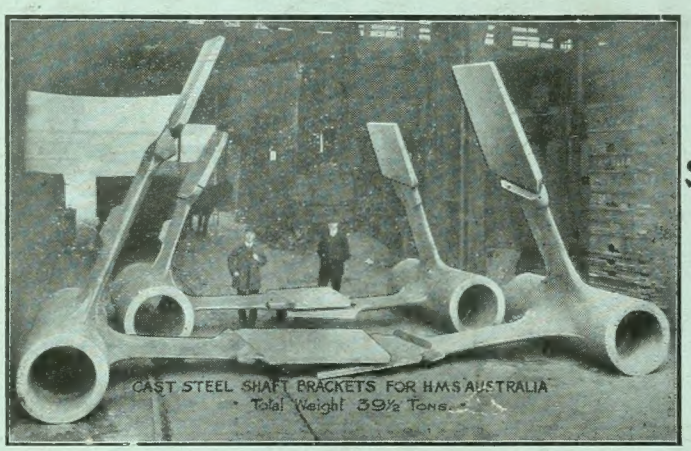
THE
Aston Brass Company
& Whitehouse Ltd.,
ASTON LANE, BIRMINGHAM.

SAY YOU SAW IT IN THE "S. & S. R."

THOS. FIRTH & SONS, Ld.

29 St Vincent Pl. GLASGOW. SHEFFIELD. 8 The Sanctuary LONDON S.W.1

"SPEEDICUT" HIGH SPEED STEEL, DRILLS, REAMERS, MILLING CUTTERS.



"SPEEDICUT" HIGH SPEED SLITTING SAWS. FILES. ENGINEERS' SMALL TOOLS.

STEEL FORGINGS & CASTINGS.

• FOR SHIPBUILDING AND GENERAL ENGINEERING. •

DOXFORD

& SONS LIMITED

SHIPBUILDERS & ENGINEERS

SUNDERLAND

London: Printed by HARRISON & SONS, Printers in Ordinary to His Majesty, 45, 46, and 47, St. Martin's Lane, London, W.C. 2, and published by TRANSPORT (1910) LIMITED, Proprietors of SHIPBUILDING AND SHIPPING RECORD, at Queen Anne's Chambers, Westminster, London, S.W. 1. *May* 23, 1918.